Science

Third Preparatory

First Term

MULTIPLE CHOICE

QUESTIONS

" M.C.Q "

I – Lesson One :

1 – The concept of the body movement means.......................

    a. constancy of its position with the change in time
    b. the change in its position with the time
    c. its speed
    d. its acceleration

2 – The two factors which can be used to describe the motion of a body are the.........

    a. speed and time   c. area and time
    b. distance and time   d. displacement and speed

3 – The distance covered by a moving body through a unit time is called....of the object

    a. weight   c. speed
    b. density   d. motion

4 – The speed equals........................

    a. distance + time   c. distance + time
    b. distance x time   d. time / distance

5 - When car (A) covers the same distance as car (B) at the same time, this means that....

    a. car (A) is faster than car (B)   b. car (A) is slower than car (B)
    c. car (B) is slower than car (A)
    d. the two cars move at the same speed

6 – When car (A) covers a smaller distance than car (B) at the *same time span.* So...........

    a. car (A) is faster than car (B)
    b. car (A) is slower than car (B)
    c. car (B) is slower than car (A)
    d. the two cars move at the same speed

7 – When a moving object covers equal distances in equal intervals of time, this means that the body moves with........................

    a. uniform speed   c. increasing speed
    b. uniform acceleration   d. increasing acceleration

8 – When an object covers equal distances at unequal intervals of time, this means that the object moves at.........................

- a. non-uniform speed
- b. increasing acceleration
- c. uniform speed
- d. decreasing acceleration

9 - A car moving on a straight line covers a total distance (d) in a total time (t), the average speed of the car is given by...........................

- a. $V^- = d/t$
- b. $V^- = dt$
- c. $V^- = t/d$
- d. $V^- = h/ km$

10 – The speed of a moving object relative to an observer in another moving object is called......................speed

- a. uniform
- b. irregular
- c. average
- d. relative

11 – The **relative speed** of a moving object relative to an observer moves at the **same** speed in the **opposite** direction is......................the **actual (real) speed**

- a. double
- b. the same
- c. half
- d. quarter

12 – The **relative speed** of a moving object relative to an observer moves at the **half** speed in the **same** direction is......................the **actual (real) speed**

- a. double
- b. the same
- c. half
- d. quarter

- Problems :

1 - A moving bus covers a distance of 500 m in 25 sec, so its **speed** equals.......

- a. 200 m/sec
- b. 20 m/sec²
- c. 20 m/sec
- d. 20 m

2 – If a car and a bike moving from the same position and in the same direction, the speed of the car 50 m/sec and the speed of the bike is 10 m/sec. So, after 4 seconds. The **distance** between them becomes...................metre

- a. 100
- b. 160
- c. 200
- d. 240

3 – If a car moves at a uniform speed of a car 300 metres in a half minute, so its speed equals.............m/s

- a. 300
- b. 30
- c. 10
- d. 150

4 – If the uniform speed of a car is 72 km/h, so its **speed** in (m/s) equals.............................

   a. 20 m/s   b. 25 m/sec   c. 18 m/sec   d. 40 m/ sec

5 – If the uniform speed of a car is 108 km/h, so its speed equals................................m/s

   a. 10   b. 20   c. 30   d. 40

6 – If the speedometre of a moving car points to 90 km/h, therefore after two hours the car covers.............................

   a. 90 m   b. 180 m   c. 90 km   d. 180 km

7 – A car moves at a regular speed equals 90 km/h. this means that the car covers a distance equals......................metres in 40 sec

   a. 4000   b. 3600   c. 2000   d. 1000

8 – A runner ran the 1ˢᵗ 100 **metres** of a race in 8 **seconds** and the 2ⁿᵈ 100 **metres** in 12 **seconds**, therefore his **average speed** during the **whole race** is.........................

   a. 8 m/s   b. 10 m/s   c. 12 m/s   d. 20 m/s

9 – A person takes 900 **meters** to transfer from home to work moving at **average speed** of 3 **m/sec.** Which of the following equals the **time** between **home** and **work**?..........

   a. 3 minutes   b. 10 minutes   c. 5 minutes   d. 9 minutes

10 – A student takes a time of 10 **min** to move from his home to the school with **average speed** equals 2 **m/sex.** What is the **distance** between his **home** and the **school**?............

   a. 84 m   b. 48 m   c. 1.2 km   d. 3.6 km

11 – If car (A) moves with speed 40 km/h and car (B) moves with speed 50 km/h in the **same direction,** the speed of car (B) relative to a passenger in car (A) is.........................

   a. 90 km/h   b. 10 km/h   c. 50 km/h   d. 40 km/h

12 – If the relative speed of a car is 50 km/h relative to an observer in a bus moves in the **same direction** at 70 km/h, therefore the **actual** speed of this car is.........................

   a. 20 km/h   b. 70 km/h   c. 120 km/h   d. 170 km/h

2 – Lesson Two :

1 – (Distance-time) graph of an object that moves at uniform speed is a.................

    a. straight line parallel to time axis
    b. straight line passes through the origin point
    c. curved ling   d. zigzag line

2 – For a car moves at a regular speed, the ratio d/t.........................

    a. increases   b. is constant   c. decreases   d. is doubled

3 – On recording the results of an experiment in which an object moves. The result were as follows :

The object moves at.............

Distance (m)	10	20	30
Time (sec)	1	2	3

    a. an increasing speed   c. a uniform speed
    b. a uniform acceleration   d. an irregular speed

4 – The amount of change in speed at a unit time determines....................................

  a. velocity   b. displacement   c. distance   d. acceleration

5 - Acceleration measurement unit is....................

    a. metre/sec   b. metre.sec   c. metre/sec^2 d. metre.sec^2

6 – The object moves at a constant uniform *speed*, this means that...............

    a. it moves at zero acceleration
    b. it moves at constant acceleration
    c. it covers equal distances at unequal time intervals
    d. it covers unequal distances at equal time intervals

7 – When the object moves with **an acceleration = zero**, this means that................

    a. speed is changed
    b. acceleration increases
    c. speed of the body is constant (regular)
    d. body moves with deceleration

8 – It is said that the object moves at a uniform (regular) *acceleration* when...............

    a. its final speed is equal to its primary speed
    b. its speed (changes, increases or decreases) by equal amounts at equal times
    c. it covers equal distance at an equal times
    d. no correct answer

9 – When an object speed **increases**, the movement is described as.................

    a. uniform speed
    b. decelerating motion
    c. zero acceleration
    d. accelerating motion

10 – When the final speed of a moving object is more than its initial speed, therefore the object motion is described as........................

    a. uniform speed
    b. accelerating motion
    c. decelerating motion
    d. uniform acceleration

11 – The ratio between the **final** speed and the **initial** speed of an object moves at *an accelerating* motion is.................

    a. more than 1
    b. less than 1
    c. equal to 1
    d. equal to zero

12 – Decelerating motion means that the...................

    a. object speed decreases by time
    b. object speed increases by time
    c. object speed is constant
    d. object is at rest

13 –When the final speed of a moving object is less than its initial speed, therefore the object motion is described as........................

    a. uniform speed
    b. accelerating motion
    c. decelerating motion
    d. uniform acceleration

14 - The ratio between the **final** speed and the **initial** speed of an object moves in a straight line in *a decelerating* motion is.................

    a. more than 1
    b. less than 1
    c. equal to 1
    d. equal to zero

15 – If the body moves from **rest** at a uniform acceleration, so its *final speed* determined from the relation...............

　　a.　$V_1/\Delta t$　　　　　b. $D/\Delta t$　　　　　c. $a/\Delta t$　　　　　d. $a \times \Delta t$

15 – A car takes 4 **sec** to reach 9 **times** its intital speed, therefore the car moves with **acceleration** which its **numeric value** equals.......................of its **initial speed**

　　a.　quarter　　　　　b. half　　　　　c. three times　　　　　d. double

16 – The line number...................represents the motion at the **greatest** uniform (positive) acceleration

　　a.　1
　　b.　2
　　c.　3
　　d.　4
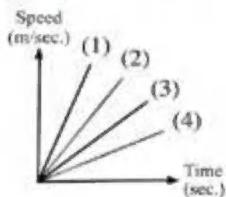
# - Choose the correct graph :

1 – The graph that shows the movement of an object at a constant speed is........................
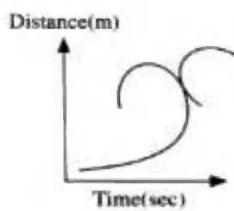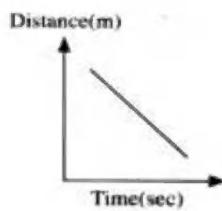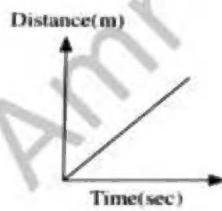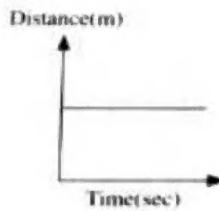

　　　　a.　　　　　　b.　　　　　　c.　　　　　　d.

2 – Which of the following (speed-time) graphs describes the movement of an object at constant speed?...........................
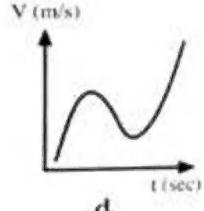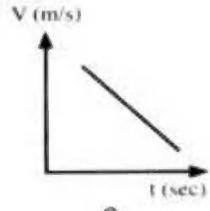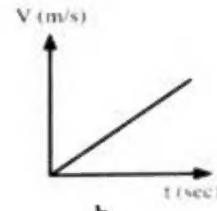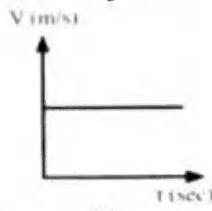
　　　　a.　　　　　　b.　　　　　　c.　　　　　　d.

3 – The graph (..........................) represents an object **at rest**
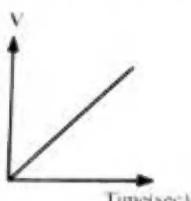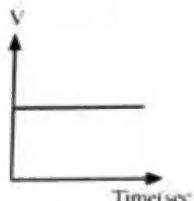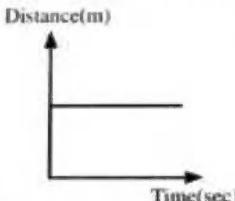
| a. | b. | c. | d. |
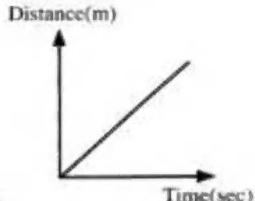
4 – Which of the following graphs represents the movement of a body at uniform (regular) acceleration?.................
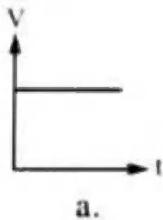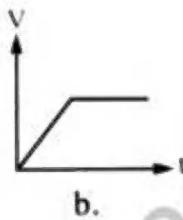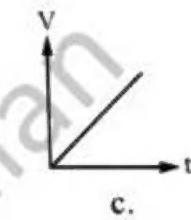
| a. | b. | c. |

5 – Which of the following graphs represents the motion of a body at a uniform acceleration?.................
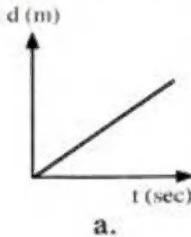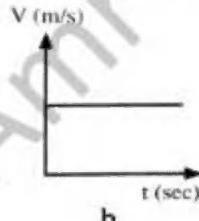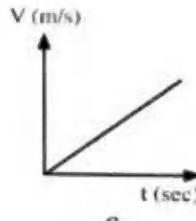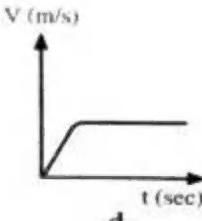
| a. | b. | c. | d. |

- Problems :

1 – In the opposite figure :

The **ratio** between the **speed** of the **two** objects **A** and **B** **approximately** is...........

a. 9/2

b. 9/4

c. 3/2

d. 9/3
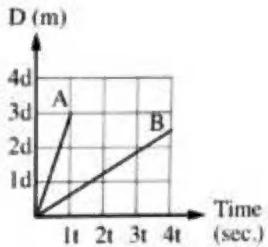
2 – From the opposite figure, the **speed** of the **car** equals..........................**km/h**

a. 25
b. 50
c. 75
d. 100
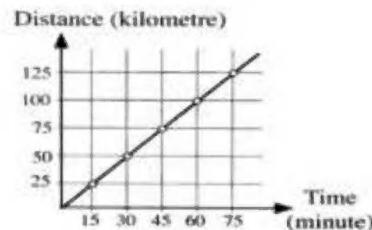
3 – The opposite graph represents the movement of a bicycle that got **a hole** in **one** of **its tires** and it took ....minutes to **be repaired**

a. 20
b. 40
c. 30
d. 70
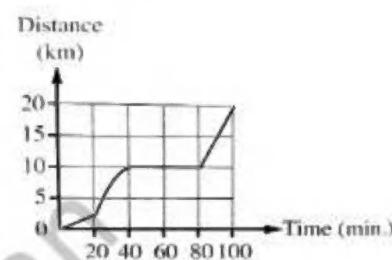
4 - A race car moves from **rest** position and its speed reaches 100 **km/h** in 20 **seconds**. So, its **acceleration** is....................................m/sec²

a. 5   b. 1.3   c. 1.5   d. 2

5 - If an object moves from **rest** regularly until its speed (velocity) reaches 10 m/s. after **two seconds** from the start of moving, so the **change** of **speed (velocity)** (ΔV) through the two **seconds** = ...m/sec

a. 10   b. 5   c. 20   d. 13

6 - An object starts to move from **rest** by an acceleration equals 4 m/sec² through 6 sec, so the **final speed** of the object equals................m/sec

a. 16   b. 24   c. 20   d. 18

7 - A moving object, its **initial** speed equals 7.5 m/sec and the acceleration equals 10 m/sec². So the **time** at which the **final** speed becomes **4 times** its **initial** speed is...sec

a. 2.25   b. 22.5   c. 2.5   d. 5.22

8 - A car moves with speed 72 **km/h**, the driver uses the brakes then the car **stops** after 8 seconds. So the **acceleration** by which the car moves equals.................m/sec²

a. 1.5   b. 2.5   c. 3.5   d. 4

9 - A car driver moves by a speed 80 m/s used the brakes to make the car moves with uniform decreasing acceleration 2 **m/sec²**. so **its speed** after 12 seconds from using the brakes equals...........................m/sec

    a. 46   b. 56   c. 24   d. 40

10 - A car moves at a speed 60 m/sec. If the drives used the brakes to **decrease** the speed by 3 m/sec². So, the **time** after which the car **stops** is...............seconds

    a. 10   b. 20   c. 30   d. 40

3 – Lesson Three :

1 – The scalar quantity is identified by its....................................

    a. magnitude only   c. magnitude and direction
    b. direction only   d. magnitude and velocity

2 – From the examples of the scalar quantities is the...................................

    a. velocity   b. mass   c. force   d. acceleration

3 – From the examples of the scalar physical quantities are..............................

    a. length and acceleration   c. mass and velocity
    b. time and weight   d. time and speed

4 – Which of the following physical quantities are considered as scalars only?...........

    a. Force and time
    b. Mass and force
    c. Radius and area
    d. Displacement and acceleration

5 - ....is a physical quantity that is identified by magnitude only

    a. Velocity   b. Acceleration   c. Speed   d. Force

6 – All the following are scalar quantities except....................

    a. length   b. force   c. time   d. mass

7 – To determine the length, mass and time, we must know............................

    a. magnitude and direction
    b. magnitude and measuring unit
    c. direction and measuring unit
    d. magnitude, direction and measuring unit

8 - ....is a physical quantity that both its magnitude and direction are necessary for identifying it

    a. The quantity of matter   c. Vector quantity
    b. Scalar quantity   d. No correct answer

9 – From the examples of the vector physical quantities is............................

    a. displacement   c. time
    b. mass   d. length

10 - Which of the following physical quantities are considered as vectors only?...........

    a. mass and force   c. radius and area
    b. displacement and acceleration   d. force and time

11 - ....is a vector quantity measured in m/sec

a. Velocity   b. Speed   c. Time   d. Displacement

12 – Acceleration is a........................

    a. vector quantity whose unit is m/s^2 c. vector quantity whose unit is m/s
    b. scalar quantity whose unit is m/s^2 d. scalar quantity whose unit is m/s

13 – The distance that is covered by a body in a certain direction is called.............

    a. distance   c. velocity
    b. displacement   d. acceleration

14 – The shortest length covered by the object in a fixed direction is called..........

    a. distance   c. speed
    b. displacement   d. acceleration

15 – Displacement is a....................

    a. scalar quantity and its unit is metre
    b. vector quantity and its unit is m/sec
    c. vector quantity and its unit is kilogram
    d. vector quantity and its unit is metre

16 – The displacement is a physical quantity whose measuring unit is....................

    a. metre   b. m/s   c. m/s^2 d. metre.sec

17 – When an object moves in straight line in one direction, therefore................

    a. distance > displacement   c. distance = displacement
    b. distance < displacement   d. displacement = zero

18 – The average velocity is determined from the relation................................

    a. distance / time   c. displacement / time
    b. distance x time   d. speed/time

19 – Measuring unit of average velocity....................

    a. m.sec   b. m/sec   c. sec/m   d. m/sec^2

20 - ....is considered from the fastest wild animals

    a. Wolf   b. Lion   c. Cheetah   d. Elephant

21 – The plane which flies in against the wind direction....................than that which flies in the same direction of wind

    a. consumes more fuel   c. its speed increases
    b. takes longer time   d. (a) and (b)

- Problems :

1 – **Judy** covers a displacement equals 4 km in **south** direction from her **home** to the **school**, while **Fatma** covers a displacement 2 km in **north** direction from her **home** to the **same school**. So, the **displacement** from Judy's home to Fatma's home is........km

    a. 7   b. 4   c. 6   d. 2

2 – Suppose that you move from start point 3 m eastward, then move 7 m westward, then 6 metres eastward. So, your **position now** from the starting point is............m

    a. 7   b. 6   c. 4   d. 2

3 – If a bicyclist moved 1500 m eastward, then 1700 m westward, so the **difference** between the **distance** and **displacement** is.................metres

    a. 200   b. 700   c. 3000   d. 3200

4 – An object moves 15 m to the north, then it moves 5 m to the south. **So** the **magnitude** and **direction** of the body's **displacement** is.....................

    a. 10 m in north direction
    b. 15 m in north direction
    c. 10 m in south direction
    d. 5 m in south direction

5 – **Choose : In the opposite figure**, a body starts his motion from the point (a) directed to the south to the point (b), he covers a distance of 40 m, then he is directed to the east to the point (c) which far 30 m apart from the point (b), so :............

    A. The value of the **distance** covered equals...........................
        a. the length of ab
        b. the length of bc
        c. the length of ac
        d. the length of ab + bc
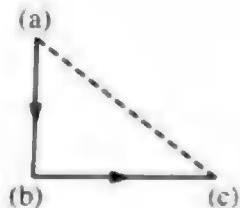
    B. The value of the body **displacement** equals........................
        a. the length of ab
        b. the length of bc
        c. the length of ac
        d. the length of ab + bc

6 – **Choose : in the opposite figure**, a body starts his motion from the point (a) to (b) then to point (c), then **returned to point (a)**, so the **distance** and displacement covered equals.........and.......metres **respectively**

    a. 120   b. 70   c. 50   d. zero
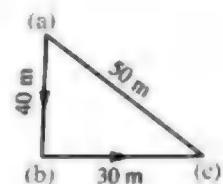
7 – In the opposite figure : A body starts moving from point (A) to point (B) and (C), then it **returns** to point (A), so the **distance** that the body moves is **more than** its **displacement** by.........metres
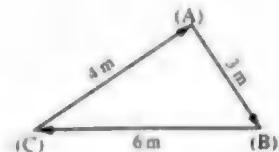
a. 7   b. 9   c. 10   d. 13

8 – Choose : From the opposite figure, when an object moves from point (A) to point (D) passing through points (B) and (C), the **displacement** from (A) to (D) equals...........in the direction (AD)

a. 20 cm   c. 60 cm
b. 40 cm   d. 80 cm
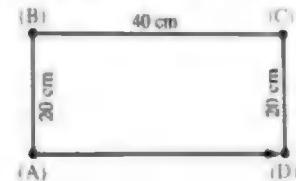
9– The opposite figure represents the movement of an object in **a circular path** along the **perimeter** of 300 **m** from point (A) to the **same point** passing by points B,C and D. If you know that the object takes time equals 10 **sec.** to cover the path ABC, then 20 **sec** to cover the path CDA. Sio the **displacement** done by the body equals.........

a. zero   c. 50 m
b. 300 m   d. 30 m
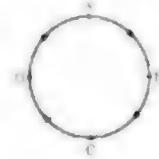
10 – In the opposite figure

The **perimeter (circumference)** of this circle is 44 **metres** and the **diameter** is 14 **m.** When an object moves from point (A) to point (B) to point (C) in 10 seconds. **Complete**

- **Distance** = ...metres
- **Displacement** =......................metres in.................direction
- **Velocity** =...............m/s in ....direction
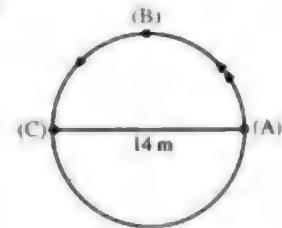
11 – In the opposite figure : When an object moves from the point (A) to point (B), the **displacement** from (A) to (B) equals..............cm

a. 10 √2
b. 10
c. 20
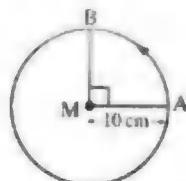
12 – If an object is moving in **a circular path**, so an amount of **displacement** when covered ¼ circle equals to an amount of displacement when it covered..............circle

   a. 1/3   b. 1/2   c. 3/4   d. 1

13 – **From the opposite figure : Calculate**

   a. The **total distance** covered by the moving body
   b. The **average speed**
   c. The **velocity** through the path $A \rightarrow B \rightarrow C$
   d. Calculate the **acceleration** by which it moves between A and B

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....
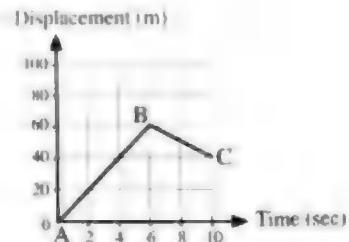
14 – **From the opposite figure : Calculate**

   a. Total **distance**
   b. **Displacement**
   c. **Velocity** after the *first* five seconds

....
....
....
....
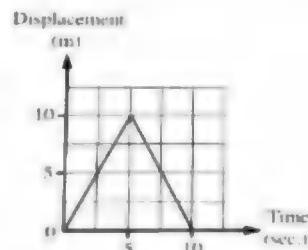
15 – From the opposite figure: Calculate the **displacement** of the car after time equals

   A. **2 seconds**
   B. **5 seconds**

....
....
....
....

4 – Lesson Four :

- Part One :

1 – The bouncing off the light ray in the same medium when it meets a reflecting surface is the.......................

    a. incident ray

    b. reflected ray

    c. light reflection phenomenon

    d. light refraction phenomenon

2 – The **reflected light ray** when falling on *another reflecting surface* is called...........

    a. the light reflection

    b. the reflected light ray

    c. the angle of incidence

    d. the incident light ray

3 – When a light ray falls perpendicular on a reflecting surface, its angle of incidence =.....

    a. Zero   b. $60°$ c. $90°$ d. $180°$

4 – If a light ray falls in a smooth (plane) mirror as shown in the opposite figure, it reflects by angle of reflection equals................

    a. Zero   c. $90°$

    b. $30°$ d. $180°$

5 – If a light ray falls on a reflecting surface by an angle equals $45°$, the angle of reflection equals......................

    a. $35°$ b. $90°$ c. $55°$ d. $45°$

6 – If the angle between the incident light ray and the reflected light ray is $40°$, so the angle of reflection equals..............

    a. $20°$ b. $40°$ c. $80°$ d. $90°$

7 – A light ray falls on a plane mirror as in the figure, it reflects where the angle of reflection equals..........................
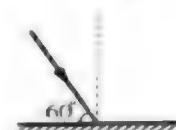
    a. $30°$ c. $120°$

    b. $60°$ d. $90°$

8 – A light ray fell on a plane mirror as in the figure, it reflects, where then angle of reflection equals................

a. $30°$ c. $120°$
b. $60°$ d. $90°$
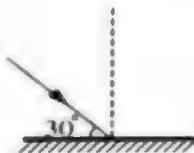
9 – In the opposite figure :

You can **reflect** the *reflected light ray* back in the *same path* to the **light source.**

If you put **a plane mirror** :

a. In a perpendicular position to the reflected light ray
b. With an angle of $45°$ to the reflected light ray
c. With an angle of $90°$ to the reflected light ray
d. (a) and (c) are correct
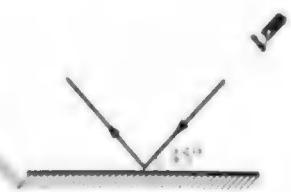
10 – In the opposite figure :

You can get **angle** of **reflection** equals $60°$ by :

a. Moving the light source by $30°$ towards the plane mirror
b. Moving the plane mirror by $30°$ towards the light source
c. Moving the light source by $15°$ towards the plane mirror and moving the plane mirror by $15°$ towards the light source
d. All are correct
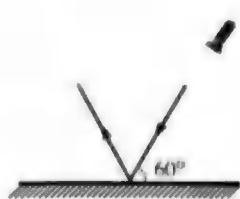
- Part Two :

1 – The image formed behind the plane mirror is always................................

a. virtual – enlarged – erect
b. real – diminished – inverted
c. real – equal – inverted
d. virtual – equal – erect

2 – If you put an object in front of a plane mirror, the ratio between the **length** of the image and the **length** of the object is.............................

a. more than one   c. equal to one
b. less than one   d. no correct answer

3 – If you put a plate written on it the word (Light) in front of a plane mirror, it appears in the mirror as a plate written on it.................

   a. **Light**.   b. ᴛдɪ̙ɪ̷Ɉ .   c. ᴊdɢiꟻ .   d. no correct answer.

4 – Which one of these figures represents the correct image for an object placed in front of a plane mirror?.......................
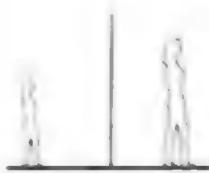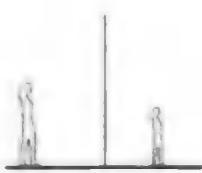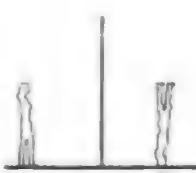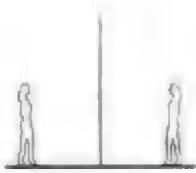
   a.   b.   c.   d.

5 – If a candle is put in front of a plane mirror, which of the images you see?.........

   a. 1   c. 3
   b. 2   d. 4
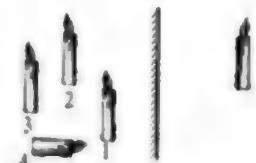
6 – In the opposite figure : The time in the clock which is placed in front of the mirror refers to.......................

   a. 1 : 26   c. 10 : 34
   b. 10 : 26   d. 11 : 41
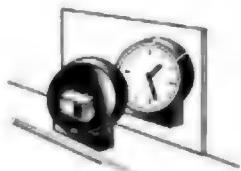
7 – In the opposite figure : Four cars A, B, C and D each of them moves in the direction that shown by the arrow. Any two drivers can see each other in the mirror?..........

   a. A, B
   b. B, C
   c. C, D
   d. A, C
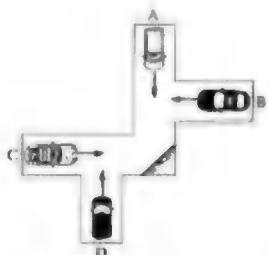
8 – If the distance of the object to the plane mirror is 10 cm, the distance of its image to the mirror is.....................

   a. 5 cm   c. 20 cm
   b. 10 cm   d. no correct answer

9 – If you stand in front of a plane mirror at a distance of 100 cm , the distance between you and your image is..............................

   a. 50 cm   b. 200 cm   c. 150 cm   d. 100 cm

10 – A body was put in front of a plane mirror at a distance 4 metres, an image is formed behind the mirror. If the mirror moved towards the body one metre, so the distance between the **first image** and the **second image** is...................metre (s)

   a. 1   b. 2   c. 3   d. 4

11 – If a body is put in front of a plane mirror as shown in the opposite figure :

   1. The distance between the image and the mirror's surface is.........
       a. 2 cm   c. 1 cm
       b. 3 cm   d. 4 cm
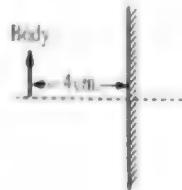
   2. If the mirror moves a distance of 1 cm in the direction of the body, so the distance of the **image** from the **first image** is..........

       a. 1 cm   c. 3 cm
       b. 2 cm   d. 4 cm

12 - Adham stopped at a distance of 30 cm from a plane mirror and saw his image :

1. Which of the following represents the **properties** of the **formed image** of Adham?
   a. Real, erect and magnified
   b. Virtual, erect and equal to the object
   c. Virtual, erect and diminished
   d. Real, erect and equal to the object

2. The **distance** between Adham and his formed image on the planer mirror is...........
       a. 30 cm   c. 90 cm
       b. 15 cm   d. 60 cm

3. The incident ray at any point on a plane mirror reflects as the angle of incidence is...
       a. equal to the angle of reflection
       b. not equal to the angle of reflection
       c. equal to the angle of refraction
       d. not equal to the angle of refraction

- Part Three :

1 – The straight line that passes by the pole of the mirror and its centre of curvature is expressed as the..............................

   a. pole of the mirror   c. secondary axis of the mirror

   b. principal axis of the mirror   d. all the previous answers

2 – The focal length of a spherical mirror equals..................its radius of curvature

   a. double   c. quartet

   b. half   d. four times

3 - A spherical mirror whose **radius** is 60 cm, its focal length equal to..............................

   a. 30 cm   c. 60 cm

   b. 120 cm   d. 90 cm

4 – The focal length of a spherical mirror equals..................its diameter

   a. double   b. half   c. quartet   d. four times

5 – A concave mirror was cut from hollow sphere glass ball of **diameter** 16 cm. its focal length is......................

   a. 8 cm   b. 6 cm   c. 4 cm   d. 2 cm

6 - A concave mirror has a focal vertex (length) of 10 cm, so its radius of curvature of its surface equals......................

   a. 5 cm   b. 10 cm   c. 20 cm   d. 40 cm

7 – Light rays coming from the Sun are......................

   a. convergent   b. parallel   c. divergent   d. reflected

8 – The incident light ray at a point on the surface of a concave mirror reflects such that the angle of incidence......................

   a. equals the angle of reflection   b. equals the angle of refraction

   c. is more than the angle of reflection

   d. is smaller than the angle of refraction

9 – Which of the following figures represents the correct path of the reflected rays from a concave mirror?.......................................
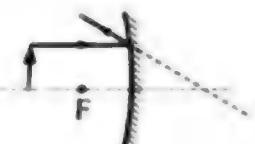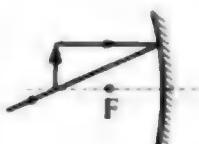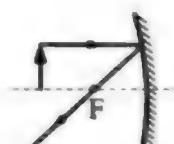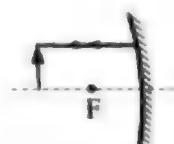
a.　　　　　　　　　b.　　　　　　　　　c.　　　　　　　　　d.

10 – If an incident light ray falls parallel to the principal axis of a concave mirror as in the figure, which of the reflected rays represent the correct path?.......................

a. 1　　　　　　　　c. 3
b. 2　　　　　　　　d. 4
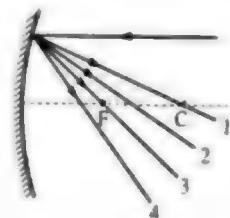
11 – In the opposite figure : Radius of mirror curvature =.................cm

a. 3
b. 6
c. 9
d. 12
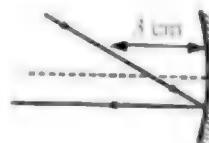
12 – If the light ray falls passing through the focus of the concave mirror, it will...................

a. reflect parallel to the principal axis
b. reflect through the centre of curvature
c. reflect on itself
d. there is no correct answer

13 – If a light rays falls on a spherical mirror and this ray passes by the centre of curvature of the mirror, so it reflects by an angle equals..............

a. zero　　　　　　b. 45°　　　　　　c. 90°　　　　　　d. 120°

14 – If a light ray falls on a concave mirror as in the opposite figure, so it reflects by an angle equals....................

a. zero　　　　　　c. 90°
b. 45°　　　　　　d. 120°
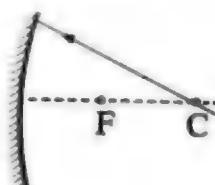
15 – When the object is very far from a concave mirror,........................image is formed

   a. very tiny
   b. magnified
   c. real
   d. (a) and (c) are correct

16 – When the object is at the centre of curvature of a concave mirror, the image is........

   a. real, inverted and diminished
   b. real, inverted and equal to the object
   c. virtual, inverted and enlarged
   d. no correct answer

17 – When the object is placed at the centre of curvature of a concave mirror, the formed image is real, inverted and....................

   a. diminished   b. equal   c. magnified   d. very tiny

18 – A concave mirror with a focal length of 20 cm and the object is placed at a distance of 50 cm. form the mirror, the image is formed at a distance............................

a. more than 40 cm
b. more than 20 cm and less than 40 cm
c. equal to 20 cm
d. no correct answer

19 – If the position of the formed image of an object is at a distance greater than the radius of curvature of a concave mirror, so the position of the object is...............

   a. at the centre of curvature
   b. at a distance less than the focal length
   c. between the focus and the centre of curvature
   d. very far

20 – If a body is put at a distance less than the focal length of a concave mirror, the formed image will be.........................

a. real, inverted and diminished
b. real, inverted and same size of object
c. real, inverted and magnified
d. virtual, erect and magnified

21 – If the focal length of a concave mirror equals 10 cm to obtain a virtual image, the body is placed at a distance from the mirror pole equals...................

   a. 10 cm
   b. 12 cm
   c. 20 cm
   d. 5 cm

22 – A concave mirror whose radius of curvature is 50 cm, an object is placed at a distance equals.....................to form a virtual, erect and magnified image for the object

   a. 12 cm   b. 35 cm   c. 25 cm   d. 50 cm

23 – In the opposite figure : an object is put in front of a concave mirror a virtual , erect and magnified image is formed. What is the
focal length of the mirror?..............cm

   a. 2   c. 4
   b. 3   d. 6

24 – A body is placed in front of a concave mirror at a certain distance from its pole, no image is formed *on the screen*, this is due to the body is.......................

   a. placed at infinite distance in front of the mirror
   b. placed at a distance less than focal length of the mirror
   c. placed at a distance more than the double of the focal length of the mirror
   d. placed at a distance equals the double of the focal length

25 – The spherical mirrors are used in...........................

   a. medical glasses   c. marine lighthouses
   b. telescopes   d. (c) and (b)

26 – The Roman use a huge optical piece to burn sails of enemies' ships by using sun rays. What is the suitable optical piece to do that?.............................

   a. Convex mirror   c. Plane mirror
   b. Concave mirror   d. Concave lens

27 – The optical piece which forms a virtual, erect and diminished image is.............

   a. convex lens   c. convex mirror
   b. plane mirror   d. concave mirror

28 – When an object is placed to face of a convex mirror, the formed image............

   a. lies behind the mirror   c. is erect
   b. is real   d. (a) and (c)
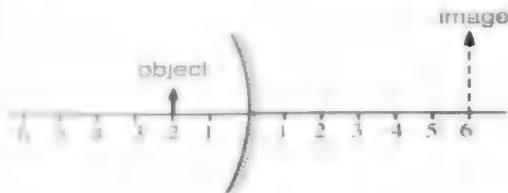
29 – When an object is put at the focus of a convex mirror, the image formed is...........

    a. real and diminished
    b. real and equal to the object
    c. real and enlarged
    d. no correct answer

30 – A body of length 4 cm is placed at a distance of 8 cm in front of a convex mirror, so the length of the formed image becomes...............cm

    a. 16   c. 4
    b. 8   d. less than 4

5 – Lesson Five :

- Part One :

1 – Lenses used in........................

    a. cameras   c. medical glasses
    b. binoculars   d. all the previous answers

2 – The convex lens ....

    a. is thin at its centre and more thickness at the tips
    b. is thick at the tips and less thickness at the centre
    c. collects the light rays falling on it
    d. diverges the light rays falling on it

3 – Concave lens is called the...........lens

    a. diverging   c. collecting
    b. converging   d. no correct answer

4 - The straight line that joins between the two centers curvature of the lens passing by the optical centre of the lens is called..............

    a. the focal length
    b. the secondary axis
    c. the principal axis
    d. the radius of curvature

5 – The distance............is the *focal length* of the **lens**

a. PQ
b. PS
c. QR
d. QS
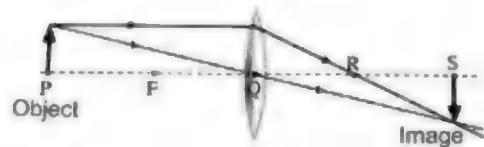
6 – The focal length of a convex lens equals.................its radius of curvature

a. double
b. half

c. quartet
d. four times

7 - A convex les whose radius is 40 cm, its focal length equal to.............................

a. 30 cm
b. 20 cm

c. 60 cm
d. 80 cm

8 – The focal length of a convex lens equals.................its diameter

a. double
b. half

c. quartet
d. four times

9 – A concave lens was cut from hollow sphere glass ball of **diameter** 16 cm. its focal length is.....................

a. 8 cm
b. 6 cm

c. 4 cm
d. 2 cm

10 - A concave lens has a focal vertex (length) of 6 cm, so its radius of curvature of its surface equals.......................

a. 5 cm
b. 12 cm

c. 20 cm
d. 40 cm

11 – From the opposite figure, the radius of curvature equals.......................

a. 5 cm
b. 10 cm
c. 15 cm
d. 20 cm
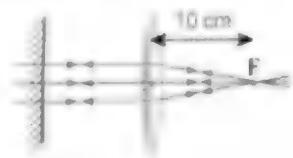
- Part Two :

1 – The focal length of the thin convex lens is...... the focal length of the thick convex lens

   a. equal to   c. less than
   b. more than   d. not related

2 - The incident light ray parallel to the principal axis of a convex lens, it exists from the lens.........................

   a. passing through its optical centre
   b. passing through its focus
   c. parallel to the principal axis
   d. passing without refraction

3 - The incident light ray passes through the focus (F) of a convex lens, it exists from the lens, it exists from the lens...............................

   a. passing through its optical centre
   b. passing through its focus
   c. parallel to the principal axis
   d. passing without refraction

4 - The incident light ray passes through the optical centre of the lens, it exists from the lens, it exists from the lens...................

   a. passing through its optical centre
   b. passing through its focus
   c. parallel to the principal axis
   d. passing without refraction

5 – Which of the following figures represents correct path of rays through a convex lens?.
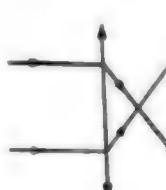
   a.   b.   c.   d.

6 – Which of the following figures represents the correct image formed by a convex lens?

a.

b.

c.

d.
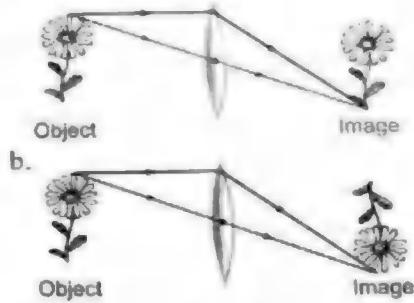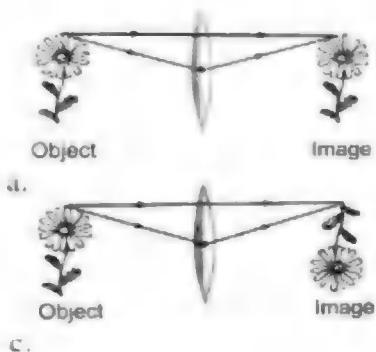
7 – A convex lens with focal length of 20 cm and an object was placed at 40 cm from the lens, the image of the object is formed at................cm

a. 5

b. 10

c. 20

d. 40

8 – If you put an object (A) at the centre of curvature of a convex lens and plane mirror in its centre of curvature of the other side of the lens, so the image formed by the plane mirror with respect to the object (A) is...................

a. upright and equal

b. upright and diminished

c. inverted and equal

d. inverted and magnified
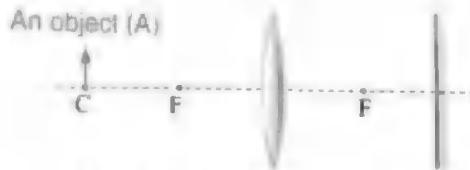
9 – If an object is put at a distance greater than the double of the focal length of a convex lens, the image formed...................

a. between the focus and the centre of curvature

b. at the double of the focal length

c. at infinity

d. in front of the lens in the same side

10 – A convex lens its focal length is 5 cm. Put a body at a distance more than double of its focal length, the formed image is real, inverted and small at a distance...................cm

a. 5

b. 8

c. 10

d. 20

11 – If an object is placed at a distance more than twice of the focal length from a convex lens, its focal length is 5 cm and the image which formed is inverted, real and smaller at a distance.....................cm

   a. 3
                       c. 8

   b. 5
                       d. 10

12 – An object is placed at a distance of 80 cm from a convex lens of focal length of 20 cm. The image of the object is formed at a distance of................cm from the lens

   a. 30
                       c. 100

   b. 50
                       d. 133

13 – A convex lens, its focal length is 50 cm. An object is placed at a distance of 80 cm from the lens, the image of the object is formed at a distance of..............

   a. greater than 100 cm
             c. equals 50 cm

   b. equals 100 cm
             d. no correct answer

14 – A lens is place in the passage of Sun rays, a very small image for the Sun is formed at a distance 20 cm from the optical centre of the lens. If this lens is used to form a real, inverted and enlarged image for another body. What is the distance between the body and the optical centre of the lens?......................................

   a. 10
                       c. 30

   b. 20
                       d. 40

15 – A board with letter (L) on it, is put at a distance of 40 cm at the left side of the convex lens. Then the formed image...............received on a screen which is at a distance of 60 cm at the right side of the lens

a. ⌐   b. L   c. ⊤   d. Γ

16 – On putting an object at a distance of 11 cm from a convex lens optical centre, a real inverted and magnified image is formed and when putting it at a distance of 13 cm, a real inverted and diminished is formed. So, the expected value of the focal length is..........

   a. 10 cm
                       c. 6 cm

   b. 9 cm
                       d. 12 cm

17 – An object is put at a distance less than the focal length of the convex lens, so the properties of the formed image is..................

- a. real, inverted and enlarged
- b. real, inverted and smaller
- c. virtual, upright and enlarged
- d. no correct answer

18 – An object is put at the focus of a convex lens, the image will be....................

- a. between the focus and the centre of curvature
- b. not formed
- c. at the centre
- d. no correct answer

19 – On putting a torch in front of a convex lens at a distance equals its focal length, the light rays emerged from the lens are........................

- a. parallel
- b. diverged
- c. converged
- d. no correct answer

20 – The image formed by the concave lens is always....................

- a. virtual, inverted and enlarged
- b. real, inverted and smaller
- c. virtual, upright and enlarged
- d. virtual, upright and diminished

21 – The virtual image is always formed by the..................

- a. plane mirror
- b. convex mirror
- c. concave lens
- d. all the previous

22 – The ratio between the body length and its image formed by a concave lens is......one

- a. more than
- b. less than
- c. equal to
- d. always

23 – The optical piece which forms a virtual, upright and diminished image for a body is..

- a. convex mirror
- b. plane mirror
- c. convex lens
- d. concave mirror

24 – In the opposite figure, if the optical piece is painted from one side with silver metal. The incident light ray which falling as shown will undergo.........

a. refraction only
b. reflection only
c. reflection then refraction only
d. refraction then reflection then refraction

- Part Three :

1 – The person with normal vision sees the objects clearly at a distance not less than....

a. 25 cm   b. 20 cm   c. 15 cm   d. 6 m

2 – The person with normal vision sees the objects clearly at a distance not more than....

a. 25 cm   b. 20 cm   c. 15 cm   d. 6 m

3 – Vision defects occur due to....................

a. the eye lens is *not* always convex
b. the eye ball is always spherical
c. the eye ball is *not* always spherical
d. (a) and (c) are correct answers

4 – Short-sightedness person is the person who.................

a. sees the far objects only clearly
b. sees the far and near objects unclearly
c. sees the near objects only clearly
d. can't see neither far nor near objects

5 – A short-sighted person sees the far objects distorted as their images are formed.........

a. on the retina   c. in front of the retina
b. behind the retina   d. in front of the lens

6 – The short-sightedness leads to the collection of rays.....................retina

a. on   c. in front of
b. behind   d. below

7 – In the short-sightedness,...........................

    a. the images of the near objects are formed behind the retina
    b. the eye ball diameter is large
    c. the eye ball diameter is small
    d. no correct answer

8 - ....is used to correct (treat) the short-sightedness

    a. convex lens   c. concave mirror
    b. concave lens   d. plane mirror

9 - A doctor advised a person who has a sight defect to use glasses with concave lens, it means that this person suffers from....................

    a. an increase in the convexity of the eye lens surface
    b. a decrease in the convexity of the eye lens surface
    c. a decrease in the eye ball diameter
    d. disability of seeing near objects clearly

10 –Long-sightedness person is the person who................

    a. sees the far objects only clearly
    b. sees the far and near objects unclearly
    c. sees the near objects only clearly
    d. can't see neither far nor near objects

11 – A long-sighted person sees the far objects distorted as their images are formed.........

    a. on the retina   c. in front of the retina
    b. behind the retina   d. in front of the lens

12 – The long-sightedness leads to the collection of rays.....................retina

    a. on   b. behind   c. in front of   d. below

13 – In the long-sightedness,...........................

    a. the images of the near objects are formed in front the retina
    b. the eye ball diameter is large
    c. the eye ball diameter is small
    d. no correct answer

14 - ....is used to correct (treat) the long-sightedness

   a. convex lens   c. concave mirror
   b. concave lens   d. plane mirror

15 - A doctor advised a person who has a sight defect to use glasses with convex lens, it means that this person suffers from....................

   a. a decrease in the convexity of the eye lens surface
   b. an increase in the convexity of the eye lens surface
   c. an increases in the eye ball diameter
   d. disability of seeing far objects clearly

16 - ....lenses are used instead of glasses

   a. Concave   c. Contact
   b. Convex   d. Converging

17 – Contact lenses can stick to the eye....................by the eye fluid

   a. cornea   c. retina
   b. lens   d. iris

18 - ....is a disease infects the eye, so it becomes opaque

   a. Contact   b. Cataract   c. Diarrhea   d. Typhoid

19 – From the causes of cataract is..............

   a. genetic readiness   c. old age
   b. effect of drugs   d. all the pervious

6 – Lesson Six :

1 – The universe contains...............................

   a. stars and galaxies   c. living organisms
   b. planets and moons   d. all the previous answers

2 – The number of galaxies in the universe is about........................million galaxies

   a. 10 000   b. 100 000   c. 20 000   d. 200 000

3 – The building (structural) units of the universe are..........................

a. moons

c. stars

b. planets

d. galaxies

4 – Galaxies are formed of groups of......................

a. moons

c. planets

b. stars

d. constellations

5 – Galaxies gather in groups known as...............................

a. galaxies clusters

c. solar system

b. ancestral galaxies

d. planets

6 - ....are located in the spiral arms of Milky Way galaxy

a. Old stars   b. Moons   c. Small stars   d. (a) and (c)

7 - ....is the star of our solar system

a. Moon   b. Galaxy   c. The Sun   d. The Earth

8 – The solar system consists of the Sun and.................planets revolve around it

a. 8   b. 9   c. 7   d. 10

9 – The Sun and the surrounding planets revolve around the centre of.............

a. Earth   b. Moon   c. Galaxy   d. Universe

10 – The solar system is located on one of the....................arms of the Milky Way galaxy

a. spiral   b. oval   c. circular   d. straight

11 – The Sun takes about.............to complete one rotation around the centre of the galaxy

a. 220 thousands years

c. 220 million years

b. 230 million years

d. 320 million years

12 – Planets rotate around the Sun by the effect of gravity of..................

a. the Sun   b. the Earth   c. Neptune   d. Uranus

13 – The biggest star that can be seen from the Earth by people is..................

   a. Saturn
   b. The Sun
   c. Neptune
   d. Uranus

14 – The light year is...........................

   a. the light speed in km/sec
   b. the distance covered by light in one year
   c. the time consumed by the light to cover a certain distance
   d. the speed of light and electromagnetic waves in km/h

15 – Astronomers measure the distances between stars with light year, because stars.......

   a. generate large amounts of heat and light
   b. seem small light points
   c. are millions of kilometres away from each other
   d. (a) and (c)

16 – The scientists believed that the universe emerged from a massive explosion and it is in...........................

   a. continuous contraction
   b. contraction then expansion
   c. continuous expansion
   d. expansion then contraction

17 – The continuous expansion of the universe is due to...........................

   a. separation of galaxies
   b. approaching of galaxies
   c. equivalent of galaxies
   d. (a) and (b)

18 – The theory which explains the origin of the universe is...............theory

   a. Big Bang
   b. nebular
   c. crossing star
   d. solar nebular

19 – Scientists believe that the matter of the universe was a...........ball of high pressure and high temperature

   a. solid   b. liquid   c. gaseous   d. (a) and (c)

20 – After minutes from the Big Bang, the temperature becomes...............million degrees

   a. 100   b. 1000   c. 10000   d. 100000

21 – The two gases which produce galaxies, stars and the universe from million years are..

  a. oxygen and nitrogen
  b. hydrogen and fluorine
  c. helium and oxygen
  d. helium and hydrogen

22 – Within minutes after Big Bang, hydrogen gas was formed by a percentage of...........

  a. 25 %
  b. 50 %
  c. 75 %
  d. 100 %

23 – Within minutes after Big Bang, helium gas was formed by a percentage of...........

  a. 25 %
  b. 50 %
  c. 75 %
  d. 100 %

24 – According to the Big Bang theory, within minutes from the origin of the universe, the *ratio* of hydrogen to helium was...............

  a. 75 : 1
  b. 25 : 1
  c. 3 : 1
  d. 1 : 3

25 - ....are originated after about 2000 : 3000 million years from Big Bang

  a. Galaxies
  b. Stars
  c. Planets
  d. Ancestral galaxies

26 - ....began to form after about 3000 million years from Big Bang

  a. Galaxies
  b. Stars
  c. Planets
  d. Ancestral galaxies

27 – The Milky Way galaxy took its disc form after about......million years from Big Bang

  a. 1000
  b. 10000
  c. 3000
  d. 5000

28 – The Sun was born after about................million years from the Big Bang

  a. 3000
  b. 2000
  c. 15000
  d. 10000

29 – The earliest form of life began to appear on the Earth's surface after about....millions years of the Big Bang

  a. 15000
  b. 13000
  c. 12000
  d. 10000

30 – From the oldest theories about the evolution of the solar system is...........theory

   a. Big Bang
                   c. crossing star
   b. nebular
                   d. modern

31 – The scientist who established the nebular theory is...................

   a. Newton
        b. Chamberlain
        c. Moulton
        d. Laplace

32 - ....theory assumed that the solar system was originally a glowing gaseous sphere

   a. Nebular
                   c. Modern
   b. Crossing star
              d. (a) and (c)

33 – According to Laplace assumptions, the nebula gradually lost its heat, so...........

   a. its size contracted only
   b. its revolving speed around itself increased only
   c. it is vanished
   d. (a) and (b) are correct answers

34 – Laplace theory assumed that the gaseous rings separate from nebula after its cooling and freezing forming the.............

   a. Sun
                   c. universe
   b. gaseous ball
             d. planets of the solar system

35 – The scientist(s) who established the crossing star theory is/are...................

   a. Chamberlain and Moulton
        c. Laplace
   b. Newton
             d. Isaac Newton

36 - ....theory assumed that the origin of the solar system was from the explosion of the expanded part of the Sun forming a gaseous line of great length

   a. Big Bang
                   c. crossing star
   b. nebular
                   d. modern

37 – The founder of the modern theory to explain the origin of the solar system is.........

   a. Chamberlain and Moulton
        c. Laplace
   b. Newton
             d. Fred Hoyle

38 – In the modern theory, bombing the star nucleus away was due to..............

   a. the force of gravity   c. drop in temperature

   b. collision by asteroids   d. huge nuclear reactions

39 – Fred Hoyle assumed that the Sun controls in the orbits of planets around it due to.... of the Sun

   a. the temperature   c. the attraction force

   b. rotation speed   d. glowing

40 – Astronomers use special equipment to study the Sun, the equipment is...........

   a. glasses   c. lens

   b. telescopes   d. mirrors

41 – The Hubble telescope was launched in April in...............

   a. 1905   c. 1995

   b. 1990   d. 1959

7 – Lesson Seven :

1 - ....is (are) from the **somatic cells** inside the **plant's** body

 a. Seed   b. Anther   c. Ovary   d. (a) and (c)

2 – The hereditary material of the living organism is found inside the...................of the cell

a. nucleus   b. cytoplasm   c. nucleolus   d. mitochondria

3 – The part of the cell which is responsible for the occurrence of cell division is the.......

 a. nucleus   b. cytoplasm   c. nucleolus   d. mitochondria

4 – The chromosome consists of two chromatids connected together in a point called.......

 a. centrosome   b. centriole   c. centromere   d. chromatin

5 – **23 pairs** of **chromosomes** containing......................

   a. 46 chromatids   c. 92 chromatids

   b. 46 centromeres   d. (b) and (c)

6 – The **chemical structure** of chromosome is.........................

    a. the nucleic acid only
    b. protein and nucleic acid
    c. protein, fats and nucleic acid
    d. all the previous

7 – Chromosome is **chemically** composed of nucleic acid....................and protein

    a. HNO_3 b. H_2SO_4 c. DNA   d. RNA

8 – ....represent the genetic material of the living organisms

    a. Somatic cells   c. Chromosomes
    b. Reproductive cells   d. (a) and (b) are correct answers

9 – Somatic cells in most of living organisms contains **2 groups** of chromosomes called...

    a. haploid number   c. tetrad
    b. diploid number   d. spindle fibers

10 – If the chromosomal number in the **somatic cell** is 2N, then its number is the **reproductive cell** is................

    a. N   b. ½ N   c. 2N   d. 4N

11 – If the number of chromosomes in **liver cells** of a certain living organism is 32 chromosomes, then the number of chromosomes in **a reproductive cell** is.............

    a. 16   b. 64   c. 23   d. 16 pairs

12 – The **gametes** contain **a group** of chromosomes called.......................

    a. haploid number   c. tetrad
    b. diploid number   d. spindle fibers

13 – The number of the chromosomes in the **human liver** cell **is 23 pairs**, which of the following contains **a haploid number?**...................

    a. Skin cell   c. Fertilized ovum
    b. Pancreatic cell   d. Sperm

14 – The number of chromosomes in **pollen grain** is............the number of chromosomes on the **female ovum**

   a. equal to   b. half   c. double   d. quarter

15 – The *ratio* between the **number** of chromosomes in **a pollen grain** to the **number** of **chromosomes** in a **root cell** of a flowering plant is...................**one**

   a. more than   b. less than   c. equal to   d. twenty

16 – If the **nucleus** of **a maize pollen grain** contains **10 chromosomes**, then the **nucleus** of **somatic cell** in the **same plant** contains..................ones

   a. 5   b. 10   c. 15   d. 20

17 – If the chromosomal number in the **male gamete** of an organism is 20, so the chromosomal number in the **liver** cells equals.............chromosomes

   a. 5   b. 10   c. 20   d. 40

18 – The number of chromosomes in each **somatic cell** and the **sperm** of a living organism is **respectively**...................chromosomes

   a. 6, 12   b. 5, 6   c. 8, 8   d. 12, 6

19 – If each cell of **muscle cells** in a **female rabbit** contains **22 pairs** of chromosomes, so the number of chromosomes present in **two** ovarian cells equal.........chromosomes

   a. 2   b. 22   c. 44   d. 88

20 – If each cell of **muscle cells** in a **female rabbit** contains **22 pairs** of chromosomes, so the number of chromosomes present in **one** ovarian cell equal.........chromosomes

   a. 2   b. 22   c. 44   d. 88

21 - If the cell of the **liver** in the **rabbit** contains 44 **chromosomes,** so the number of chromosomes in the cells of its **skin** is....................*pairs*

   a. 23   b. 22   c. 44   d. 88

22 – The type of division in the somatic cells is..................

   a. meiotic   b. mitotic   c. reduction   d. abnormal

23 – Mitotic division happens in the cells of............................

   a. two testes   b. two ovaries   c. liver   d. (a) and (b)

24 - ....cells are not divided at all

   a. Skin   c. Liver
   b. Adult red blood cells   d. Hair

25 – The neuron doesn't divide as it doesn't contain..................

   a. nucleus   c. spindle fibers
   b. centromere   d. mitochondria

26 – The................is the phase in which the cell is prepared for the cell division through duplicating the genetic material

   a. prophase   c. anaphase
   b. interphase   d. telophase

27 – Which of the following is **not** considered a phase from the cellular division?.........

   a. Prophase   c. Anaphase
   b. Interphase   d. Telophase

28 – The **right arrangement** of the **phases** of **mitosis** is............

   a. prophase, anaphase, metaphase and telophase
   b. telophase, prophase, anaphase and metaphase
   c. prophase, metaphase, telophase and anaphase
   d. prophase, metaphase, anaphase and telophase

29 – The genetic material (chromatin reticulum) condenses and appears in the form of long, thin and double strings in........................

   a. prophase   c. anaphase
   b. metaphase   d. telophase

30 – Spindle fibers in the **animal cell** are produced from the.....................

   a. chromosomes   c. centrosome
   b. centromere   d. nucleus

31 – In the mitotic division, the chromosomes migrate towards the **cell equator** in........

    a. prophase   b. metaphase   c. anaphase   d. telophase

32 – The centromere of each chromosome is divided longitudinally, then the two chromatids are separated from each other and the spindle fibers contract through.....

    a. prophase   b. metaphase   c. anaphase   d. telophase

33 – Spindle fibers are **formed** and **disappeared** in.........................phases **respectively**

    a. anaphase and telophase   c. telophase and anaphase
    b. prophase and telophase   d. telophase and prophase

34 – The nucleolus **formed** and **disappeared** in.........................phases **respectively**

    a. anaphase and telophase   c. telophase and anaphase
    b. prophase and telophase   d. telophase and prophase

35 – The result of **seven** successive mitotic division is.........................cells

    a. 32   b. 64   c. 128   d. 192

36 – Liver transplantation process depends on.......................cell division

    a. reduction   b. abnormal   c. indirect   d. meiosis

37 – **Meiotic** division happens in the cells of........................

    a. liver   b. testes   c. skin   d. bones

38 – The **ratio** between the number of chromosomes present in the **gametes** produced by **meiotic** cell division to the number of chromosomes present in **somatic cells** is.....

    a. quarter   b. half   c. double   d. third

39 - Meiosis is different from mitosis in that each produced cell contains.................of the parent cell

    a. half the number of chromosomes
    b. twice the number of chromosomes
    c. triple the number of chromosomes
    d. four times the number of chromosomes

40 – Meiotic cell division is responsible for the...........................

a. growth of the organism

b. production of gametes

c. compensation of the damaged cells

d. duplication cells number

41 – Meiotic division occurs in the **anther** of the flowering plants to produce......

a. ova

b. pollen grains

c. sperms

d. ovules

42 – Chromatin reticulum intensifies and appears in the form of distinct chromosomes in the phase of.........................from meiosis division

a. metaphase I

b. telophase I

c. anaphase I

d. prophase I

43 – Chromosomes are arranged in homologous pairs to form tetrad in..............

a. metaphase I

b. telophase I

c. anaphase I

d. prophase I

44 – A tetrad consists of.....................**chromosomes**

a. 2

b. 4

c. 6

d. 8

45 – Crossing over phenomenon happens in the end of the.......................

a. first prophase

b. first anaphase

c. second metaphase

d. second anaphase

46 – The phenomenon represented by the opposite figures occurs in the cells..............of the body of the living organisms

a. anther in flowering plants

b. ovaries in human female

c. liver and skin cells

d. (a) and (b)
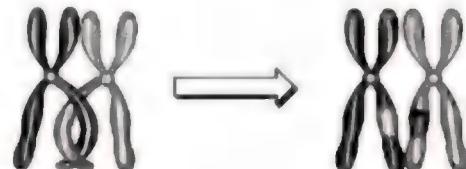
47 – Variation of genetic traits result from meiosis is due to the...............

a. reduction of chromosomal number

b. crossing over phenomenon

c. duplication of DNA

d. formation of tetrad

48 – The opposite figure represents the **metaphase** of.............division

a. mitotic   c. 2nd meiotic
b. 1st meiotic   d. (a) and (c)

49 – The first meiotic division **differs** from the second meiotic division in.............

a. formation of spindle fibers   c. formation of nuclear membrane
b. formation of the tetrad   d. no correct answer

50 – There is **no**...........................phase occurs during the second meiotic division

a. anaphase   b. interphase   c. prophase   d. telophase

51 – **Gametes** differ from the **reproductive cells** in........................

a. number of chromosomes   c. its importance
b. ability of division   d. all the previous answers

52 – Nanometre equals........................metre

a. 1×10^{12} b. 1×10^{-12} c. 1×10^{-9} d. 1×10^{9}

53 – The cancerous cells can be detected and killed by using Nano-molecules of..........

a. silver   b. iron   c. gold   d. platinum

8 – Lesson Eight :

1 – Through reproduction process, ...transfer from parents to offspring

a. organs   b. genetic traits   c. gametes   d. hormones

2 – ....reproduction mostly occurs in single-celled living organisms

a. Asexual   b. Sexual   c. Mitotic   d. Meiotic

3 – Asexual reproduction takes place by........................division

a. asexual   b. sexual   c. mitotic   d. meiotic

4 – Binary fission, budding, regeneration and spore propagation take place by..........

a. mitosis   b. meiosis   c. fission   d. sexual

5 – The parental individual **disappears** when the reproduction occurs by.....................

 a. sporangium   b. regeneration   c. binary fission   d. budding

6 – The parental individual **disappears** when the reproduction occurs in....................

a. bacteria   b. yeast   c. bread mould   d. mushroom

7 – The unicellular protozoans such as amoeba and paramecium reproduce by.............

 a. regeneration   b. binary fission   c. budding   d. gametes

8 – Amoeba reproduces by..........................

 a. gametes   b. regeneration   c. binary fission   d. budding

9 –The binary fission of asexual reproduction occurs in....................

a. mammals   b. euglena   c. reptiles   d. gymnosperms

10 – Bacteria reproduce by.....................

 a. Sexual   b. spores   c. binary fission   d. vegetative

11 – The reproduction by budding occurs in............................

   a. mushroom   c. bread mould fungus
   b. yeast fungus   d. bacteria

12 – Asexual reproduction occurs in yeast fungus by......................

   a. regeneration   c. budding
   b. binary fission   d. gametes

13 – Asexual reproduction occurs in hydra by...........................

   a. regeneration   c. budding
   b. binary fission   d. gametes

14 – The yeast fungus will make the **best rate** of **budding,** of it is put in.............

   a. salted warm water   c. salted boiling water
   b. sugary cold solution   d. sugary warm solution

15 – A colony may be formed as a result of......................

a. budding   b. mitosis   c. regeneration   d. (a) and (b)

16 – The ability of some living organisms to compensate their missing parts are called...

a. binary fission   b. budding   c. gametes   d. regeneration

17 – Starfish reproduces asexually by........................

    a. regeneration   c. budding
    b. spores   d. gametes

18 – Starfish arms could be regenerated and give new animal If they contain a part of the.

a. bud   b. zygote   c. sporangium   d. central disc

19 – The starfish **neither** regenerated **nor** reproduce by regeneration if................

    a. if you burn the starfish
    b. if you cut **all** of its arms, **without** containing **a part** of the **central disc**
    c. if you cut **all** of its arms, **each one** containing **a part** of the **central disc**
    d. (b) and (c) are correct answers

20 – If the chromosomal number in cells of starfish is 2N, so number of chromosomes in the resulted cells is................

    a. N   b. 2N   c. ½N   d. 3N

21 – Bread mould fungus reproduces asexually by.....................

    a. regeneration   c. budding
    b. sporogony   d. gametes

22 – Some algae and fungi reproduce asexually by.....................

    a. regeneration   c. budding
    b. spore propagation   d. vegetative reproduction

23 – Asexual reproduction by spore propagation in fungi and algae occurs by producing..

    a. gametes   c. spore
    b. cilia   d. whips

24 - Reproduction by spores occurs in all of the following organisms, **except**........

    a. starfish   c. bread mould

    b. algae   d. mushroom

25 – Spores are found in some fungi inside a structure called..............

    a. bud   b. zygote   c. sporangium   d. central disc

26 –Bread mould fungus spores will form new identical individuals, when they fall on......

    a. water surface   c. a dry hot bread

    b. a piece of ice   d. a wet bread

27 – The vegetative reproduction occurs in the plants without the need of...............

    a. stems   b. leaves   c. seeds   d. roots

28 – From the plants that can reproduce vegetatively like **potato**, is................

  a. apple   b. orange   c. sweet potato   d. tomato

29 – The vegetative reproduction, the produced individuals are similar to their...........

    a. parent individual   c. the zygote

    b. both parents   d. no correct answer

30 – It is possible to produce new plants identical to the mother cell by................

    a. gametes   c. tissue culture

    b. budding   d. fertilization

31 – The process by which the living organism produces new individuals with genetic properties similar (identical) to the parent individual is called.................

    a. sexual reproduction   c. vegetative reproduction

    b. asexual reproduction   d. (b) and (c) are correct

32 – Sexual reproduction occurs in..........................

    a. unicellular organisms   c. plants only

    b. higher plants and animals   d. single-celled organisms

33 – The type of reproduction occurs between two individuals is..................

   a. asexual   c. regeneration
   b. sexual   d. budding

34 – The source of genetic variation is..................reproduction

   a. budding   c. sexual
   b. vegetative   d. regeneration

35 – Gametes formation takes place in...............reproduction

   a. sexual   c. budding
   b. asexual   d. vegetative

36 – In sexual reproduction, the male gamete fuses with female gamete to form..............

   a. sporangium   c. nucleus
   b. zygote   d. cytoplasm

37 – ....contains the genetic material from both parents and grows to form an individual carries characters from both parents

   a. The zygote   c. The chromosome
   b. The gamete   d. The cytoplasm

38 – All the following cells contain **full copy** of genetic material, **except**...............

   a. spore   c. zygote
   b. bud   d. pollen grain

39 – The **small – sized sperm** and the **large-sized ovum** share in the formation of the genetic material and the traits of the child by ratio..................

   a. 1 : 2   c. 2 : 1
   b. 1 : 1   d. 1 : 4

THANK YOU

Al-Safwa integrated schools

first term practice test

AL SAFWA
INTEGRATED SCHOOLS

Middle 3

SCIENCE

Q1: Choose the correct answer:

1. The…………is the phase in which the cell is prepared for division by doubling the genetic materials.

   a. prophase   b. interphase   c. metaphase

2. one of the vector physical quantity is………………

   a. time of car trip   b. mass of a cat   c. force of a pushed stone

3. reproduction by spores occur in all the following organisms except…………

   a. star fish   b fungus   c. bread mold   d. mushroom

4. a person advised a person who has short defect to use glasses with convex lenses so the person suffer from…………….

   a. decrease in convexity of eye lens   b. increase in the eye ball diameter

   c. disability of seeing far objects clearly

5. a concave mirror has a focal length of 8 cm, an object is placed Infront of this mirror forming an image at a distance 20 cm from the mirror. This mean that the object is placed at……………………. from the mirror.

   a. 8cm   b. less than 8 cm   c. more than 8 cm and less than 16cm

1

6. when a moving object covers equal distances in unequal period of time so it moves by……………………

a. average speed   b. relative speed   c. uniform speed   d. irregular speed

7. the scientist who published a research including his vision about the nebular assumption…………………..

a. Chamberlin   b. Laplace   c. Fred hoyle   d. molten

8. an object was put at 10 cm from a concave mirror, real , inverted and equal image as formed, if the object moved 3cm toward the mirror, so the formed image will be…………………….

a. real , inverted and diminished   b. real, inverted and enlarged

9. within minutes of big bang , hydrogen gas was formed by a percentage of…………………..%

a. 25   b. 50   c. 75   d. 100

10. if the number of chromosomes in liver cell is (32) , then the number of chromosomes in ovum cell is…………………………….

a. 8   b. 16   c. 24   d. 32

11. the optical piece which formed laterally inverted image and equal to the body is…………………..

a. convex lens   b. concave lens   c. spherical mirror   d. plane mirror

12. A train moves at a speed (100km/h) , the it covers (40km) within time………………hours.

a. 0.3   b. 0.4   c. 0.5   d. 0.6

13. yeast fungus reproduce asexually by………………………..

a. regeneration   b. binary fission   c. budding   d. spore

14. the solar system consist of the sun and………………planets revolve around it.

a. 7   b. 8   c. 9   d. 10

15. the image formed by………………….is always virtual, erect and small.

a. convex lens   b. concave mirror   c. convex mirror and concave lens

16. the speed of a moving object relative to the observer is considered as ………………….speed.

a. regular   b. average   c. vector   d. relative

17. if an object at a distance of 3 meters from a plane mirror, the distance between that object and its image is ……………mere.

a. 3   b. 6   c. 9   d. 12

18. to obtain the virtual, equal and upright image, we use…………….mirror.

a. concave   b plane   c. convex   d. all the previous

19. the scientist who established the modern theory about the evolution of the solar system is……………………..

a. Chamberlin   b. Fred hoyle   c. Laplace   d. Archimedes

20. if the number of chromosomes in liver cell is (32) , then the number of chromosomes in the male gametes is…………………….chromosomes.

a. 64   b. 16 pairs   c. 16   d. 32

29. …………………theory has assumed that the sun is the origin of the solar system.

a. big bang   b. crossing star   c. Alfred hale

30. the speed of a car 120 km/h………………..a car speed 40 m/s.

a. equal to   b. less than   c. higher than

31. the two factors describe the body motion are…………………….

a. distance and displacement   b. distance and time   c. velocity and mass

32. the nucleolus and nuclear membrane appear in the……………………….

a. telophase   b. anaphase   c. metaphase   d. prophase1

33. the reflected angle of light ray , when light ray pass through Centre of curvature is……………………….

a. zero   b. 30   c. 45   d. 90

34. the glowing and the explosion of stars as the sun due to…………………

a. chemical reaction   b. nuclear reaction   c. burning of gases

35. if an object is placed at a distance more than twice the focal length from convex lens its focal length 5 cm and the image which formed of an real, inverted and smaller at a distance ……………..cm

a. 3   b. 5   c. 8   d. 10

36. the number of chromosomes in each somatic cell and the sperm of the

male in respectively is ………………… ,……..chromosomes.

a. 6,12   b. 5, 6   c. 8,8   d. 12,6

37. the earliest life form began to appear on earth……………………..

   a. before formation of galaxies.   b. after formation of solar system

   c. after the appearance of dinosaurs

38. the reproduction by budding occurs in …………….fungus.

a. mushroom   b. yeast   c. bread mold   d. starfish

39. the radius of curvature of a spherical mirror equal ………………of its focal

   Length.

   a. double   b. half   c. quarter   d. four times

   40. the number of galaxies in the universe is about………………million
galaxies

   a. 100   b. 1000   c. 10 thousands   d. 100 thousands

   41. the real image is formed by…………………

   a. concave mirror   b. convex mirror   c. concave lens   d. plane mirror

   42. when a body moves by acceleration equal zero this means

that……………

   a. the body velocity is uniform   b. the body velocity is variable

   c. the body acceleration is increasing

   43. scientists believe that the universe originated from a massive

explosion   and was in a …………………state.

   a. continuous expansion   b. contraction then expansion

   c. expansion then contraction

21. the ………………….is the physical quantity that both its magnitude and direction are necessary for identifying it.

a. quantity of matter   b. scalar quantity   c. vector quantity

22. if the train moves at 100km/hour, it cover a distance of 40 km in …………..hour.

a. 0.3   b. 0.4   c. 0.5

23. …………………. reproduction is a source of genetic variation.

a. budding   b. regeneration   c sexual

24. meiosis occurs in the………………cells.

a. liver   b. skin   c. bones   d. testis

25. spindle fibers begin to shrink at…………………..

a. prophase   b. telophase   c. metaphase   d. anaphase

26. paramecium is a unicellular protozoan reproduce by……………………

a. binary fission   b. budding   c. regeneration   d. spores

27. the real image is always…………………..

a. inverted   b. upright   c. smaller   d. magnified

28. the parent individual disappears during reproduction in……………………

a. yeast   b. bread mold   c. bacteria

44. the ability of some animals to compensate their missing parts is called…

  a. vital   b. reproduction   c. regeneration

45. within minutes from big bang , the ratio of between hydrogen and Helium which evolved is…………………………

a. 3:1   b. 1:3   c. 2:1   d.1:2

46. if you know that the focal length for a concave mirror equal 10 cm , so for getting a virtual image for an object , it must put at a distance from the mirror equal…………..cm .

  a. 20   b. 15   c. 10   d. 5

47. if the number of chromosomes in somatic cell is 2N , then its number in the reproductive cell is …………………

  a. ½ N   b. 4N   c. 2N   d. N

48. short sightedness lead to collect rays…………………the retina.

a. in front of   b. behind   c. above   d. below

49. the change in speed in a unit time is called…………………..

  a. velocity   b. displacement   c. acceleration_ d. average speed

50. acceleration measuring unit is ……………..

a. m/sec   b. m/sec^2 c. meter   d. cm

51. if the relative speed of a car is 20 km/hr relative to an observer move at

  A speed of 40 km/ hr in the same direction, so the actual speed of the car is

  ……………..km/hr.

  a. 20   b. 40   c. 60   d. 80

Final Revision

Choose

1. The speed measurement unit is …..
a) meter.second
b) meter/second
c) Meter/ sec^2

2. The concept of the body movement means
a) Constancy of its position with the time
b) The change in its position with the time
c) Its speed
d) Its acceleration

3. The two factors which can be used to describe the motion of a body are the ……

a) Speed and time
b) Distance and time
c) Area and time
d) Displacement and speed

4. Speed equals …………..
a) Weight
b) Density
c) distance/time
5. A train moves at a speed 100 km /h, then it covers a distance of 50 km with time …… hours

a) 0.3

b) 0.4

c) 0.5

d) 0.6

6. When a Moving object covers equal distance in equal periods of time this means that objects move at

a)uniform speed

b) Uniform acceleration

c) Average speed

d) Relative speed

7. A car covers 180meters in two seconds so it's speed ….

a)90m/sec

b) 180km/hr

c) 25km/hr

d) 45m/sec

8. A car moving object on a straight line covers a total distance in a total time , the average speed of the car is given by ……..

a) $V = \dfrac{d}{t}$

b) V= dt

c) $V = \dfrac{t}{d}$

d)$V = \dfrac{h}{km}$

9. The Speed of a moving object relative to an observer in another moving object is called …… speed

a) Uniform

b) Irregular

c) Average

d) Relative

10. If the relative speed of a car is 50km/h relative to an observer in a bus moves in the same direction at 70km/h, there fore the actual speed of this car is ……..
a) 20Km/h
b) 70km/h
c) 120km/h
d) 170km/h

11. The relative speed of a moving object relative to an observer moves at the same speed in the opposite direction is ……. The actual speed
a) Double
b) The same
c) Half
d) Quarter

12. Acceleration measurement unit is ……..
a) meter/sec
b) meter.sec
c) meter/ sec^2

13. When an object moves with acceleration =zero this mean the…..
a) Change in a distance at a unit of time
b) Change in a speed in a unit of time
c) Rate of a change of a distance relative to the speed
d) No correct answer

14. Movement in a uniform acceleration

a) If the object's speed changes at equal values in equal times intervals

b) If the distance that the objet covers changes at equal value in equal time intervals

c) If average speed equals the regular speed

d) no correct answer

15. The ratio between the final speed and initial speed of an object moves at an accelerating motion is ……..
a) More than one
b) Less than one
c) Equal to one
d) Equal to zero

16. The object moves at a constant uniform speed , this mean that ………..
a) It moves at zero acceleration
b) It moves at constant acceleration
c) It Covers equal distances at un equal time intervals
d) It covers un equal distance at equal periods

17. A car takes 4sec to reach 9 times ,It's initial speed, so car moves with acceleration which it's numeric value equals of ……… initial speed
a) Quarter
b) Half
c) Three times
d) Double

18) The scalar quantity is identified by it's……….
a) Magnitude only
b) Direction only

c) Magnitude and direction

d) Magnitude and velocity

19. Which of the following physical quantities

a) The force and the time

b) the mass and force

c) radius and area

d) displacement and acceleration

20) …………… is the physical quantity that both it's magnitude and direction are necessary for identifying it

a) The quantity of matter

b) Scalars quantity

c) Vector quantity

d) no correct answer

21. From the examples of vector physical quantities is……

a)displacement

b)mass

c)time

d)distance

21. Displacement is a…………

a) Scalar quantity and unit meter

b) Vector quantity and unit is m/sec

c) Vector quantity and It's unit is kg

d) Vector quantity and unit is meter

22. ……… is a vector quantity measured in m/sec

a) Velocity

b) acceleration

c) speed

d) Displacement

23. One of vector physical quantities
a) Time of car trip
b) Length of pen
c) Mass of a cat
d)Force by which a person pushes a stone

Final Revision
Choose

1. Measurement of unit of velocity is ………….
a) m.sec
b) m/sec
c) c.m
d)m/sec^2

2. The distance and displacement are equal when the body moves in a……….. in one direction.
a) zigzag
b) circular
c) straight line
d) curved

3. The bouncing off the light ray in the same medium when it meet a reflecting surfaces is the ……….
a) incident ray
b) reflected ray
c) light reflection phenomenon
d) light refract phenomenon

4. A light ray is incident light rays and there reflected light ray is 40, It's angle reflection equal ……………..
a)20
b)40
c)80
d)90

5. The virtual –upright magnified image formed in case of ……
a) Concave lens
b) Plane mirror
c) Concave mirror and Convex lens
d) Convex mirror

6. The formed image of an object in the concave lens at any distance………
a) Virtual diminished
b) Virtual enlarged
c) real diminished
d) real enlarged

7. The convex lens which has great thickness from the following, It's focal length
a)4cm
b)6cm
c)8cm
d)10cm

8. If you put an object in front of a plane mirror , the ratio between the length of images and the length of the object is ………..

a) more than one

b) less than one

c) Not equal

d) Equal to one

9. A light rays falls on a plane mirror as in the figure it reflects where the angle of reflection equals……

a) 30

b) 60

c) 90

d) 120

10) A Short sighted person sees the far objects distorted as their image formed …………

a) On the retina

b) Behind the retina

c) In front of retina

d) In front of lens

11. The image formed by concave lens is always …….

a) Virtual and Erect

b) Real and magnified

c) Real and diminished

d) Real and Erect

12. The line between the centers of curvature of the lens passing by the optical Centre of the lens is Called ……….

a) The Focal Length

b) The principal axis

c) The Secondary axis

d) The Radius of curvature

13. ……………..lenses are used instead of glasses

a) Concave
b) Convex
c) Contract
d) Cylindrical

14. If an object is placed at a distance less than focal length of a concave mirror, a virtual, upright and ……… image is formed
a) Diminished
b) Equal
c) Magnified
d) Real

15. The Optical piece which forms equal. Laterally inverted image of the body is ………..
a) Convex lens
b) Concave Lens
c) Spherical mirror
d) Plane mirror

16. If a train moves with a speed 100km/h , It covers a distance 50km in …………time.
a) 5 hours
b) 0.05 hours
c) 0.2 hours
d) 0.5 hour

18. When a body moves by acceleration zero this means that ………
a) The body acceleration is increasing
b) The Body Velocity is uniform

c) The Body Velocity is Variable

19. The body between the focus and pole of the concave mirror image is …………
a) Real diminished
b) Real magnified
c) Virtual magnified
d) Virtual diminished

20. The real image is always ……….
a) Inverted
b) Up right
c) Smaller
d) Equal

21. The Speed equal of car 129km/h ………… a car speed 40m/sec
a) Equal to
b) Less than
c) Higher than

22. The image formed by …………. Is always virtual, erect and small.
a) Convex Lens
b) Concave mirror
c) Plane mirror
d) Convex mirror and concave lens

23. A concave mirror has focal length of 8cm. An Object is placed in front of all of this mirror forming an image at a

distance 20 cm from the mirror. This means that object is placed at ………… from the mirror

a) 8cm

b) Less than 8cm

C) 20 cm

d)more than 8cm and less than 16 cm

24. The number of galaxies in the universe is about …….. Million galaxies

a) 10000

b) 1000000

c) 20000

d) 2000000

25. The building unit of the universe are …………

a) Planets

b) Stars

c) Galaxies

d) Moons

26. The Universe Contains ………

a) Galaxies and stars

b) Planets and moons

c) Living Organisms

d) All previous answer.

27. The Solar system consists of the Sun and planets rotate around the Sun.

a) Nine

b) Eight

c) Six

d) Circular

28. The two gases that have produced galaxies, stars and the universe over millions of years are…………
a) Helium and Oxygen
b) Helium and Nitrogen
c) Oxygen and Nitrogen

29. The Scientist who established the modern theory of origin the solar system is ………
a) Fred hoyle
b) Laplace
c) Moulton
d) Newton

30. Sun takes about ……. To complete one rotation around the center of the galaxies
a) 220 thousand years
b) 220 million years
c) 230 million years
d) 320 million years

31. The light years is ………..
a) The distance covered with light in one year
b) The light speed in Km/sec
c) The Speed of light and electromagnetic waves in km/sec

32. According to Laplace theory in 1796, the solar system was glowing gaseous sphere known as …….
a) The Sun
b) The planets
c) The Stars
d) The Nebula

33. Within minutes after big bang, hydrogen gas was formed by percentage of ....%
a) 25
b) 50
c) 75
d) 100

34. The Sun was born after about ....million years from the big bang
a) 3000
b) 2000
c) 15000
d)10000

35. The scientist who established crossing star theory is/are
a) Chamberlain and Moulton
b) Laplace
c) Newton
d) Fred Hoyle

36 . The earliest life forms began to appear on the Earth after about .... Million years from the big bang
a) 15000
b) 13000
c) 12000
d)1000

37. .... Theory assumed that the origin of the solar system was from explosion of the expanded part of the sun forming a gaseous line of a great length from the sun .
a) Nebular

b) Big Bang
c) Crossing star
d) Modern

38. According to the Big Bang theory . within minutes from the origin of the universe , the ratio of hydrogen to helium is
a) 75:1
b) 25:1
c) 3:1
d)1:3

39. If the number of chromosomes in alive cell of a living organism is (32), then the number of chromosomes in male gametes is …………… chromosomes.
a) 64
b) 16 pairs
C) 16
d) 32

40. …………reproduction is a source of genetic variation
a) Budding
b) Regeneration
c) Sexual

41. Paramecium in unicellular protozoans reproduce by …………
a) spores
b) Budding
c) Regeneration

d) Binary fission

42. Spindle fibers begin to shrink at ……………
    a) Prophase
    b) Telophase
    c) Metaphase
    d) Anaphase

43. Meiosis occurs in the ………… cells
    a) Skin
    b) Liver
    c) Bones
    d) Tests

44. The parental individual disappears when the reproduction occurs in the …………
    a) Bacteria
    b) Yeast
    c) Bread mould fungus
    d) Mushroom

45. Meiotic Division in flowering plants occur in the anther to produce ……….
    a) Pollen grains
    b) Ova
    c) Sperms
    d) Chromosomes

46. The two factors which can be used to describe the motion of a body are the ……………
    a) Speed and time
    b) Area and time

c) Distance and time

d) Displacement and speed

47. The sources of stars (Such as Sun) is …………..

a) Chemical reactions

b) Burning gases

c) Nuclear reactions

d) Inflammable gases

48. The chemical structure of chromosome is …………

a) Nucleic acid only

b) Proton , falls and nucleic acid

c) Proton and nucleic acid

d) All the previous

49. A tetrad consists of ………….chromosomes

a) 2

b) 4

c) 6

d) 8

50. Meiosis division happens in the cells of the …………

a) Liver

b) Skin

c) Quarter

d) Four times

51. The reproduction by budding occurs in …………..fungus

a) Mushroom

b) Bread mould

c) Yeast

d) Star fish

52.The earliest life forms began to appear on earth …………
   a) Before the formation of galaxies
   b) After the formation of solar system
   c) After the appearance dinosaurs
   d) After the appearance of birds and mammals

53.Chromosome arranged in homologous pass to form tetrad in …………
   a) Metaphase I
   b) Prophase I
   c) Telophase I
   d) Anaphase I

54.The source of genetic variation is ………..reproduction
   a) Vegetative
   b) Asexual
   c) Sexual
   d) Binary fission

55. The nucleolus and nuclear membrane appear in the …………..
   a) Telophase
   b) Anaphase
   c) Metaphase
   d) Prophase I

56. It is possible to produce new plants identical to mother pant by ………..
   a) Forming gametes
   b) Fertilization

c) Budding

d) tssue culture

57. Binary fission reproduction takes place in

a) Amoeba and hydra

b) Amoeba and sponge

c) Yeast and bacteria

d) Bacteria and euglena

58. If each muscle cell in amole rabbit contains 22 pairs of chromosomes, therefore number of chromosomes in a cell of testis wall equal ………chromosomes

a) 44

b) 77

c) 22

d) 88

59. Number of chromosomes in sperm ………..number of chromosome in ovum.

a) Double

b) Half

c) Equal

d) Quarter

60. The nucleolus and nuclear membrane disappear in ………..

a) Metaphase

b) Telophase

c) Prophase

d) Inter phase

61. The ration between the number of chromosomes present in the gametes produced by meiotic cell division to the number of chromosomes present in somatic cell is ………..
   a) Quarter
   b) Double
   c) Third
   d) Half

62. Fred holy assumed that the sun controls in the orbits of planets is due to …………of the sun.
   a) The temperature
   b) Rotational speed
   c) The attraction force
   d) Glowing

63. Astronomers use special equipment to study the sun, this equipment is the ……….
   a) Glasses
   b) Telescope
   c) Lens
   d) No correction answer

64. The scientist who established the nebular theory is ………….
   a) Newton
   b) Chamberlain
   c) Laplace
   d) Moulton

65. According to Laplace assumptions, the nebula gradually last it is heat, so ……….

 a) It size contracted only
 b) It revolving speed around itself increased only
 c) It is vanished
 d) (A & B) are correct

66. Bread mold fungus reproduce asexually by …………..

 a) Regeneration
 b) Binary fission
 c) Budding
 d) Sporogonial

67. The crossing over phenomenon occur at the end of ………….

 a) Prophase I
 b) Metaphase I
 c) Anaphase I
 d) Telophase I

Mini Revision

✱(1) Choose the right answer:

Mr. Ahmed Elbasha

1. A body of length 4 cm is placed at a distance of 8 cm from a convex mirror, so the length of the formed image becomes ....
   a. 16 cm.   b. 8 cm.   c. 4 cm.   d. less than 4 cm.

2. The ability of some animals to compensate their missing parts is called the ....
   a. budding.   b. regeneration.   c. sporogony.   d. sexual reproduction.

3. The line between the centers of curvature of the lens passing by the optical centre of the lens is called the ....
   a. focal length.   b. principal axis.   c. secondary axis.   d. radius of curvature.

4. If the speed of a car is 72 km/hour, this means that its speed equals .... *m/s.*
   a. 18   b. 20   c. 40

5. The spindle filaments appear during cell division in ....
   a. telophase .   b. interphase.   c . prophase.

6. The image of the object that lies at the centre of curvature of a concave mirror is ...
   a. real, inverted and enlarged.
   b. real , upright and equal to the object.
   c. real, inverted and equal to the object.
   d. virtual, upright and equal to the object.

7. If the chromosomal number in the male gamete of an organism is 20 so, the chromosomal number in the liver cell equals ....
   a. 5 chromosomes.   b. 10 chromosomes.   c. 20 chromosomes.   d. 40 chromosomes.

8. .... established the crossing star theory.
   a. Laplace   b. Fred Hoyle   c. Hubble   d. Chamberlain

9. The centromere of each chromosome divides longitudinally and the spindle fibers contract in mitosis during ....
   a. prophase.   b. metaphase.   c. anaphase.   d. telophase.

10. The number of chromosomes in the gamete is .... the number of chromosomes in the original cell.
    a. equal to   b. half   c. quarter   d. double

11. When the body covers equal distances at unequal periods of time, the speed will be ...
    a. regular.   b. decelerated.   c. accelerated.   d. irregular.

12. All the following cells contain full copy of genetic material except ....
    a. spore.   b. bud.   c. zygote.   d. pollen grain.

13. The uniform acceleration means that the object speed .... by equal values through equal periods of time.
    a. increases only   b. decreases only
    c. increases or decreases   d. doesn't change

14. From the scalar physical quantities is the ....
    a. acceleration.   b. time.   c. velocity.   d. displacement.

15. The object moves at a constant (uniform) speed when ....
    a. it moves at a constant acceleration.
    b. it covers equal distances at unequal times.
    c. it covers equal distances at equal times.
    d. no correct answer.

16. A concave mirror with a focal length of 20 cm, and the object is placed at a distance of 50 cm from the mirror, the image is formed at a distance ....
    a. more than 40 cm.   b. more than 20 cm and less than 40 cm.
    c. equals 20 cm.   d. equals 60 cm.

17. The centromere of each chromosome is divided longitudinally, then the two chromatids are separated from each other in the ....
    a. prophase.   b. metaphase.   c. anaphase .   d. telophase.

18. Yeast fungus reproduces asexually by ....
    a. regeneration.   b. binary fission.   c. budding.   d. spore.

19. The solar system consists of the Sun and .... planets revolve around it.
    a. 7   b.8   c .9   d. 10

20. The image formed by .... is always virtual, erect and small.
    a. convex lens   b. concave mirror
    c. plane mirror   d. convex mirror and concave lens

21. The speed of a moving object relative to the observer is considered as .... speed.
    a. regular   b. average   c. vector   d. relative

22. If an object at a distance of 3 metres from a plane mirror. The distance between that object and its image is .... metre.
    a. 3   b. 6   c.9   d. 12

23. If the number of chromosomes in liver cells of a certain living organism is (32) chromosomes then the number of chromosomes in ovum cell is ....
    a. 8   b. 16   c. 24   d. 32

24. The optical piece which forms laterally inverted (reversed) image and equal to the body is ....
    a. convex lens   b. concave lens   c. spherical mirror   d. plane mirror.

25. When a moving object covers equal distances in unequal intervals of time, so it moves by ....

a. average speed. b. relative speed. c. uniforms speed. d. irregular speed.

26. The scientist who published a research including his vision about the Nebular assumption ....

a. Chamberlin. b. Laplace. c. Fred Hoyle. d. Molten.

27. An object was put at 10 cm from a concave mirror, a real, inverted and equal image was formed, if the object moved 3 cm towards the mirror, so the formed image will be ....

a. real, inverted and diminished. b. real, inverted and enlarged.
c. virtual diminished. d. virtual enlarged.

28. An observer in a moving car with 80 km/h was observing a moving car with 90 km/h in the same direction so, the observed speed of the 2nd car is ....

a. 10 km/h . b. 80 km/h. c. 90 km/h. d. 170 km/h.

29. The .... is the phase in which the cell is prepared for division by doubling the genetic material .

a. prophase b. interphase c. metaphase d. anaphase

30. A concave mirror has a focal length of 8 cm. An object is placed in front of this mirror forming an image at a distance 20 cm from the mirror. This means that the object is placed at .... from the mirror.

a. 8 cm. b. less than 8 cm.
c. 20 cm. d. more than 8 cm. and less than 16 me.

31. A doctor advised a person who has a sight defect to use glasses with convex lenses. It means that this person suffers from ....

a. a decrease in the convexity of the eye lens surface.
b. an increase in the convexity of eye lens surface.
c. an increase in the eyeball diameter.
d. disability of seeing far objects clearly.

32. Reproduction by spores occurs in all the following organisms, except ....

a. starfish. b. fungus. c. bread mould. d. mushroom.

33. One of the vector physical quantities is ....

a. time of a car trip. b. length of a pen.
c. mass of a cat. d. force by which person pushes a stone.

34. The ratio between initial speed and final speed for a moving object by increasing accelerations is ....

a. more than one. b. less than one.
c. equal to one. d. equal zero.

35. A short sighted person sees the far objects distorted as their images formed ....

a. on the retina.   b. behind the retina.

c. in front of the retina.   d . in front of the lens .

36. From examples of the scalar physical quantities is ....

a. the velocity.   b. the mass.   c. the force .   d. the acceleration.

37. The cell that never divide is ....

a. adult red blood cells.   b. the stomach.

c. the liver.   d. the skin.

38. Paramecium is a protozoan that reproduces by ....

a. spores.   b. budding .   c. regeneration.   d. binary fission .

39. reproduction which considered as a source of genetic variation is .... reproduction.

a. vegetative   b. budding   c. sexual   d. regeneration

40. The scientist who established the nebular theory is ....

a. Chamberlain .   b. Moulton.   c. Fred Hoyle.   d . Laplace.

41. (Speed - time) graph for a regular motion at a constant speed is a straight line is ......

a. curved .   b. passing by the origin point.

c. parallel to x-axis.   d. parallel to y-axis.

42. When an object is placed to face a convex mirror, the image formed is ....

a. lies behind the mirror.   b. is real.

c. is erect.   d. (a) and (c).

43. Fred Hoyle relates controlling the Sun in the orbits of the planets around it to .... of the Sun.

a. temperature   b. rotation speed   c. attraction force   d. glowing

44. The chemical structure of the chromosome is ....

a. the nucleic acid only.   b. protein and nucleic acid.

c. protein, fats and nucleic acid.   d. all the previous.

45. The two gases which produced galaxies, stars and universe through millions of years are ....

a. oxygen & helium.   b. helium & hydrogen.

c. oxygen & carbon dioxide.   d. helium & carbon dioxide.

46. The universe contains ....

a. galaxies & stars.   b. planets and moons .

c. living organisms.   d . all the previous.

47. From the properties of the image formed by a convex mirror is ....

a. virtual.   b. real.   c. upright.   d. (a) and (c) together.

48. If a person stands at a distance 2 m from a plane mirror, the distance between the person and his image is ....

a. 1 m.   b. 2 m.   c. 3 m.   d. 4 m.

49. The value of change of an object speed in one second is called ....
   a. velocity.   b. displacement.   c. acceleration.   d. speed.

50. Our solar system is located in one of the .... arms of the Milky way galaxy.
   a. spiral   b. straight   c. circular   d. oval

51. The distance from the center of mirror curvature and its focus equals ....
   a. radius of curvature.   b. quarter of the diameter of curvature.
   c. diameter of curvature.   d. half of the focal length.

52. From the scalar quantities ....
   a. the time.   b. the force.   c. the acceleration.   d . the displacement.

53. Spindle fibers appear during the cell division in the ....
   a. telophase.   b. interphase.   c. prophase.   d. metaphase.

54. When an object acceleration equal zero this means that ....
   a. the body acceleration is decreasing.   b. the body speed is variable.
   c. the body acceleration is increasing.   d. the body speed is uniform.

55. Meiotic division in flowering plants occurs in the anther to produce ....
   a. ovum.   b. chromosome.   c. pollen grains.   d. sperm.

56. Within minutes of the Big Bang, the percentage of hydrogen in the universe was ......
   a. 25%   b. 50%   c. 75%   d. 100%

57. If the speed of a car is 36 km/h , it means that its speed is .... m/sec.
   a. 10   b. 20   c. 40   d. 80

58. The distance and displacement are equal when the body moves in a ....in one direction.
   a. zigzag   b. circular   c. straight line   d. curved

59. If the distance between two centers of curvatures to the lens is 20 cm. so its focal length equal ....
   a. 5 cm.   b. 10 cm.   c. 15 cm.   d. 20 cm.

60. ratio between final and initial speed for moving body with accelerating motion ....
   a. more than one.   b. less than one.   c. equal to one.   d. equal zero.

61. The scientist who founds modem theory of the world is . ...
   a. Fred Hoyle.   b. Laplace   c. Moulten.

62. The two factors in which the movement of an object can be described ....
   a. speed and time.   b. distance and time.   c. area and time.

63. Property of the image of the object formed by the plane mirror always be ....
   a. larger than the object.   b. equal to the object.   c. smaller than the object.

64. scientists believe that the universe emerged from massive explosion and it is in ....
   a. continues contraction.   b. contraction then expansion.
   c. expansion then contraction.   d. continues expansion .

65. If a light ray falls passing through the optical centre of the convex lens, it leaves the lens ....

a. passing through the focus.   b. parallel to the principal axis.   c. without refraction.

66. The continuous expansion of the universe, is due to ....

a. separation of galaxies.   b. approaching of galaxies.   c. equivalent to galaxies.

67. The founder of modern theory of the solar system is .... scientist.

a. Moulten   b. Chamberlain   c. Fred Hoyle

68. The image formed by using a concave lens is ....
a. real , enlarged, and inverted.
b. virtual, smaller and inverted.
c . virtual, smaller and upright.

69. At the end of this phase, the nucleolus and nuclear membrane disappear from the mitosis division ....
a. prophase.   b. metaphase.   c. telophase.

70. When an object is placed between the focus of a convex lens and its center of curvature, the formed image will be ....
a. real, inverted and diminished.   b. real, inverted and magnified.
c. virtual, erect and magnified.   d. virtual, erect and diminished.

71. The result of multiplying a speed of moving object by time ....
a. acceleration.   b. mass .   c. distance.   d. force.

72. .... began to form after 3000 million years after the Big Bang.
a. galaxies.   b. ancestral galaxies.   c. the Sun.   d. the Earth.

73. If the length of the radius of curvature of concave mirror 20 cm, then the focal length of the mirror equals ....
a. 5   b. 10   c. 15   d . 20

74. The Milky Way galaxy took its disc form after about .... million years after the Big Bang.
a. 1000   b. 3000   c. 5000   d. 10000

75. From the examples of the vector physical quantities is ....
a. time.   b. force .   c. mass.   d. length.

76. The optical piece which forms an image that inverted and equal to the object is ....
a. concave lens.   b. concave mirror.
c. convex mirror.   d. plane mirror.

77. The nucleolus disappears during the mitosis cell division in ....
a. prophase.   b. metaphase.   c. anaphase.   d. telophase.

Model answer

(1) Choose the right answer:

1. D	12. D	24. D	36. B	48. D	60. A	70. B
2. B	13. C	25. D	37. A	49. C	61. A	71. C
3. B	14. B	26. B	38. D	50. A	62. B	72. A
4. B	15. C	27. B	39. C	51. A	63. B	73. B
5. C	16. B	28. A	40. D	52. A	64. D	74. C
6. C	17. C	29. B	41. C	53. C	65. C	75. B
7. D	18. C	30. D	42. D	54. D	66. A	76. B
8. D	19. B	31. A	43. C	55. C	67. C	77. A
9. C	20. D	32. A	44. B	56. C	68. C	
10. B	21. D	33. D	45. B	57. A	69. A	
11. D	22. B	34. A	46. D	58. C		
	23. B	35. C	47. D	59. A		

Model exam (1)

choose the correct answer:

1. **The two factors that describe the motion of body are**

    (speed & time– distance & time - area & time – displacement &speed)

2. From vector quantities .... (mass – time - length – displacement)

3. From living organism that reproduce by budding ....

    (mushroom – yeast fungs - star fish – amoeba)

4. Spherical mirror its radius 20 cm, its focal length equal.. (10 -20 – 40 – 60)

5. The light ray which fall passes through the optical center of length it .....

    (refract through the focus – refract parallel to principal axis – passes without any refraction)

6. The solar system is located in ....(the center of galaxy – the edge of galaxy – nebula)

Model exam (2)

choose the correct answer:

1. The light ray which fall passes through the focus of concave mirror it reflect .....

    (through the focus – parallel to principal axis – on itself – through its pole)

2. From scalar quantities .... (mass – acceleration – velocity – displacement)

3. A body is put in the front of concave length an equal image is formed at a distance 10cm from the pole of mirror so its focal length = ... (2 – 5 - 10 - 20)

4. Universe is formed from the merging of ....&..... particles.

    (Oxygen& nitrogen – Oxygen& hydrogen - nitrogen &helium - hydrogen& helium)

5. The offspring produced from asexual reproduction carryout the traits ....the parent
    (differ from – identical to – carry both male and female traits)

6. The phase that included adverse changes in mitosis cell division is ....
    (prophase – metaphase – anaphase - interphase)

Model exam (3)

choose the correct answer:

1. The ability of some animals to compensate their missing parts is.................
   (budding – binary fission – vegetative – regeneration)

2. A gaseous flaming sphere that form solar system   (near - medium – far – near & far)

3. A light ray fall on a plane mirror with incident angle equal 30 ,So the reflected angle equal
   (20 – 30 – 60 – 90)

4. A body starts its movement from rest after 2 sec. its speed reaches to 10 m/s ,so the change in the speed of body after 2 sec=......m/s². (5 - 8 – 10 – 20)

5. The sight defect which is resulted from the decrease in eye ball diameter is...........................
   (shortsightedness - cataract – longsightedness – blindness)

6. The ratio between total distance to the total time need to cover this distance is ....
   (final speed – displacement – average speed – relative speed)

Model exam (4)

choose the correct answer:

1. It is the actual length that the body cover from initial position to its final position
   (final speed – displacement – average speed – distance)

2. A body of length 10 cm is put in the front of concave lens at a distance 4 cm from its optical center, so the length of the body's image equal...   (3 - 10 – 15 – 20) cm

3. After 10000 million years from big bang the .... is formed
   (sun – ancestral of galaxies – earliest life - no correct answer)

4. ....scientist stablished the modern theory. (Laplace – chamberlain & molton- hoyle)

5. The phase at which chromosomes pairs are arranged along cell equator is ....
   (interphase – prophase1 - metaphase – metaphase1)

6. In animal cell Spindle fiber is formed from..(cytoplasm – centrosome– nucleus -centromere)

Model exam (5)

1. A car move with speed =10 m/s find its relative speed related to an observer move with the same speed and same direction   (0 - 10 – 20 – 30) m/s

2. A body of length 5 cm is put in the front of concave mirror at a distance 4 cm from its pole, an image virtual, erect and magnified image is formed for the body so the body is put at

    (distance more than double focal length - distance between center and focus

    distance less than focal length)

3. .... Theory explain the origin of universe .

    (nebular – big bang – crossing star – modern)

4. In crossing star theory the solar system was a.... (nebula – sun – other star – other planet)

5. The type of reproduction in plants which not reproduce by seeds ....

    (vegetative – budding – regeneration – binary fission)

6. In plant cell Spindle fiber is formed from..(cytoplasm – centrosome– nucleus -centromere)

Model exam (6)

1) choose the correct answer:

1. If the relative speed of a car is 50 km/h relative to an observer in a bus move in the same direction at 70 km/h therefore the actual speed of this car is ....km/h
    (20   - 70 - 120 - 170)

2. **If the angle between the incident ray and the surface of mirror is 130 , therefore the angle of reflection = ………..**   (40 – 50 – 90 - 130)

3. Fred hoyle assumed that the sun controls in the orbit of planets around it due to ......of the sun   (temperature – rotational speed – the attraction force -glowing)

4. If the nucleus of maize pollen grain contains 10 chromosomes then the nucleus of somatic cell of the plant contain ....chromosomes   (5 – 10 – 15 – 20)

5. The source of genetic variation is due to ......reproduction

    (sexual – a sexual   – vegetative – regeneration)

6. A ......is used to correct the short sight defect ....

    (convex lens – convex mirror – concave lens – concave mirror)

1) choose the correct answer:

1. If a car speed is 50 m/s and the driver used the breaks to stop the car ,there fore the time needed to stop the car if it moves with uniform acceleration = 10 m/s^2

   (5 - 10 - 20 - 25) sec

2. **If the angle between the incident ray and the surface of mirror is 60 , therefore the angle of reflection = ………..**   (20 –30 - 50 – 60)

3. Chromosome chemically consists of nucleic acid ......and protein

   (HNO3 - H2SO4 – DNA – CFC)

4. If the nucleus of a muscle cell of rabbit contains 22 pairs of chromosomes then the nucleus of sperm cell of ....chromosomes   (11 – 22 – 44 – 46)

5. ....phenomena take place at the end of prophase 1

   (big bang - aurora – crossing over – regeneration)

6. A ......is used to correct the long sight defect

   (convex lens – convex mirror – concave lens – concave mirror)

Model exam (8)

1) choose the correct answer:

1. The convex lens which has the great thickness its focal length is ....

   (4 - 6 - 8 - 10) cm

2. **the following graph refers to ……** (static body – uniform speed – uniform acceleration)
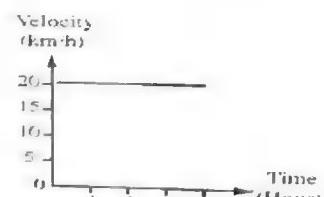
3. if the speed of car equal 72 km/h this means that its speed equal ....

   (16   - 18 – 20 – 40) m/s

4. reproduction in yeast and starfish depends on..........

   (Fertilization – regeneration – mitotic division _ meiotic division)

5. the source of stars energy is ....

   (chemical reactions – burning gases – inflammable gases- nuclear reaction)

6. the image formed by concave lens is always ....

   (erect &magnified - inverted & small – virtual & small – real & magnified)

Choose the correct answer

1-Spindle fibers appear in ....phase during cell division

   (anaphase – prophase – metaphase)

2-we obtain virtual enlarge and erect image by ....

   (concave mirror – convex mirror – plane mirror)

3-..............is an example for vector quantity

   (displacement – time – mass)

4-................theory explained the formation of universe

   (nebula – big bang – crossing star)

5-if radius equals 20 cm ,so focal length equals ....

   (20 cm – 15 cm – 10 cm)

6- virtual image for object ....

   (always inverted – can be received on screen – always erect)

7-relative speed equals zero when observer moves in ....

   (in same direction – in opposite direction – in same direction and same speed)

8-the measuring unit of acceleration is ....

   (m\s – m\s² - m.s)

9-we obtained virtual equal image by ....

(concave mirror – convex lens – plane mirror)

10-mieosis division occurs in ....cell

(skin – liver – testis)

11-the origin of solar system according to crossing star theory is
....

(nebula – sun – another star)

12-short-sight is corrected by ....

.(convex mirror – concave mirror – concave lens)

13-all of these are vector except ....

(displacement – acceleration – speed)

14-two gases that form stars ,galaxies and universe are...............

(helium, hydrogen -   helium and oxygen – hydrogen ,oxygen)

15- ....reproduction is the source of genetic variation

(sexual – asexual – vegetative)

16-if an object is placed for distance 70cm from concave mirror ,its focal length 40 cm and an image is formed at distance ....

(greater than 80cm – 80 cm – 40 cm – less than 40 cm)

17-point lies in the middle on reflecting surface is ....

(centre of curvature – pole of mirror – virtual focus)

18-yeast fungus reproduces asexually by ....

(regeneration – budding – spore)

19-the solar system consists of ....planets (7 – 8 -9)

20-the image formed by ....is always virtual ,erect and small

(convex lens – concave mirror – convex mirror and concave lens)

21-speed of moving object relative to observer is ....speed

(average – relative speed –vector)

22-percentage of hydrogen to helium is ....

(50 : 50 – 75:25 - 25:75)

23-the ....phase which cell prepare itself for division

(prophase – metaphase – interphase)

24-somatic cell divided by ....division

(mitosis – meiosis – can't divided)

25-when acceleration equals zero ,object moves with

(regular speed – changing speed – regular acceleration)

26-yeast fungus reproduce by ....

(regeneration – budding –spores)

27-two factors which can used to describe motion ....

(distance ,time – speed, time – speed , distance)

28-which of the following is a scalar quantity ....

(area and radius – displacement and force – time and velocity)

29-ratio between number of chromosomes in gametes to the number in somatic cell is ....

(twice – half – quarter)

30-chromosomes is chemically consists of ....

(RNA – protein – DNA and protein)

31- the ability of some living organism to compensate missing part...........

(spores – budding – regeneration)

32-a flat gaseous sphere which forms solar system ....

(galaxy – nebula – sun)

33-the light ray falls on a plane mirror with an angle 30 ,it reflects with angle ....

(30 – 60 – 0)

23-when light ray falls passing by optical centre ,................

(it reflects on itself – it refract without refraction – it reflects parallel)

24-a vision defect which result from shortness of eye ball.........

(cataract – short-sight – long-sight)

25-the total distance that divided to total time that's meant by ....

(relative speed – average speed – regular speed)

36-if focal length 15,the radius equals ....

(15 cm – 30 cm – 60 cm)

37-the solar system is located in ....

(center of galaxy – the nebula – at one of the arms of spiral galaxy)

38-reproductive cell is divided by ....division

(mitotic – meiosis – budding)

39-chromatids are separated in ....phase

(telophase – anaphase – metaphase)

40-The scientist had explained the modern theory is ....

(Laplace – Alfred hale – Chamberlain and Moulton)

41-the scientist had explained the nebular theory is ....

(Laplace – Alfred hale – Chamberlain and Moulton)

42-the scientist had explained the crossing star theory is..........

(Laplace – Alfred hale – Chamberlain and Moulton)

43-an object is placed at 25 cm from a convex lens of focal length 20 cm the image of objects formed at distance ....cm from the lens

(40 – 50 – 10 – 15)

44-crossing over phenomena occurs at the end of ....phase

(interphase – prophase – anaphase)

45-student takes 10 minute to move from home to school by average speed 3 m\s ,total distance equals................(1,2 km -1.3km – 30m)

46-if distance that covered by object in unit time 72km\h,its speed equals...................(25 m\s - 20 m\s – 72 m\s)

47-if distance that covered by object in unit time 90km\h,its speed equals...................(25 m\s - 20 m\s – 72 m\s)

48-which of these graphs represent uniform speed..............
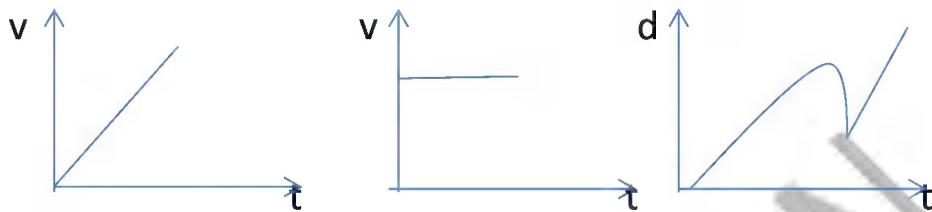
49-if an object is placed at distance 3 m from plane mirror ,so distance between image and object equals................m

(3 – 6 – 8)

50- shortest distance in certain direction is ....

(distance – displacement – velocity)

51-object moves from a to c passing by b

-Distance equals ....   a

(ac – cb – ab+bc)

-displacement equals.............

(ac – cb – ab+bc)   b   c
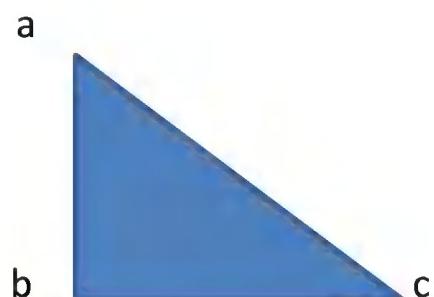
52-if number of chromosomes in liver cell 16 chromosome ,number of chromosome in reproductive cell ....(16 – 8 – 32)

53-the result of multiplying of speed and time is....................

(mass – speed – distance)

54-the piece that forms equal reversed image ....

(plane – concave mirror – concave lens)

55-if an object is placed at 80 cm from convex lens its focal length 50 cm so .image that formed at distance ....cm

(more than 100 – 100 – 50)

56-if focal length of concave mirror 10 cm ,so distance to obtain virtual image of object from mirror ....cm (5 – 10 – 15)

57-the cell can't be divided ....(red blood cell – liver – pancreas)

58-the virtual minimized and erect image is formed by ....

   (plane mirror – convex lens – concave lens and convex mirror)

59-the ratio between initial and final acceleration of object moves with positive acceleration ....(equal 1 – less than 1 – more than 1)

60-point of connection of two chromatids is........(centrosome – centromere – cell)

61-When body covers equal distance in equal time that's meant..

(Body move with regular speed – body move with irregular speed)

Good Luck

A) Choose the correct answer:

1-The two factors which can be used to describe motion are.........

a-The speed and time   b-The distance and time

c-The area and time   d-The displacement and speed

2-The concept of the body movement means...........

a-constancy of object position with time   b-speed

c-acceleration   d-change in object position with time

3-When the body moves equal distance in equal intervals of time this means that the body moves with...............

a-uniform velocity   b-uniform acceleration

c-increasing velocity   d-increasing acceleration

4-The measuring unit of acceleration is...........

a-m/sec   b-km/sec   c-m/sec^2 d-all the previous

5-When the body moves by acceleration equals zero, this means that............

a-The body velocity is variable   b-The body acceleration is increasing

c-The body acceleration is decreasing   d-The body speed is uniform

6-A convex lens is placed in the path of sun rays a very small image for the sun is formed at a distance 5 cm from the optical center of the lens if the lens is used to form an equal image for the body the object should be put a distance .... from the lens

a-5 cm   b-10 cm   c-50 cm   d-60 cm

7-Which of the following physical quantities are considered as vector?

a- mass and force   b-displacement and acceleration

c-radius and area   d-force and time

8-The image formed by the plane mirror is always...............

a-virtual, enlarged, erect   b-real, diminished , inverted

c-real, equal , inverted   d-virtual , equal , erect

9-If the focal length of a concave mirror equals 10 cm to obtain a virtual image the body is placed at a distance equals...................from the mirror.

a-10 cm   b-15 cm   c-20 cm   d-5 cm

10-The source of genetic variation is the...............reproduction

a-budding   b-vegetative   c-sexual   d-regeneration

11-The ratio between the number of chromosomes presents in gametes to the number of chromosomes present in somatic cell is.................

a-quarter   b-double   c-third   d-half

12-The optical piece which forms equal, inverted image of the body is...............

a-convex lens   b-concave lens   c-spherical mirror   d-plane mirror

13-The shortest distance covered by a body in a certain direction is called………

a-distance   b-displacement   c-acceleration   d-speed

14-From examples of vector physical quantities is………….

a-displacement   b-mass   c-time   d-length

15-The longest day is on the planet…………..

a-venus   b-mars   c-mercury   d-jupiter

16-The parent individual disappears when the reproduction occurs in…………..

a-bacteria   b-yeast   c-bread mold   d-mushroom

17-To determine the length, mass and time we must know……..

a-magnitude and direction   b-magnitude and measuring unit

c-direction and measuring unit   d-magnitude, direction and measuring unit

18-The rebounding of light in the same medium when it meets a reflecting surface is known as…………..

a-incident ray   b-reflected ray

c-reflection phenomenon   d-refraction phenomenon

19-The time taken by Saturn to revolve around the sun is…………

a-12 years   b-29 years   c-84 years   d-165 years

20-The properties of the image of a body placed at distance less than the double the focal length and more than the focal length of the convex lens is……………..

a-virtual, enlarged image   b-real, enlarged image

c-real, dimensioned image   d-virtual , enlarged image

21-The chemical structure of the chromosome is………..

a-the nuclear acid DNA b-protein c-carbohydrates d-a & b together

22-In mitotic division the chromosomes are arranged in the middle of the cell during…….

a-metaphase   b-prophase   c-anaphase   d-telophase

23-The cell prepare itself for meiotic division in…………….

a-metaphase   b-prophase   c-anaphase   d-interphase

24-Asexual reproduction in yeast fungus occur by…………..

a-regeneration   b-budding   c-gametes   d-cutting

25-in sexual reproduction the male gamete fuses with female gamete to form…………

a-sporangium   b-zygote   c-nucleus   d-cytoplasm

26-The ability of some animals to compensate their missing parts is called……………

a-regeneration b-budding c-forming spores d-sexual reproduction

27-Meiosis division happens in cells of the…………

a-liver　　　　　　b-two ovaries　　　　　　c-kidney　　　　　　d-skin

28-Crossing over happens in the...........

a-first prophase　　b-second metaphase　　c-first anaphase　　d-second anaphase

29-The scientist who established Nebular theory is................

a-Chamberlain　　　　　b-Molten　　　　c-Alfred Hale　　　　d-Laplace

30-The straight line joins between center of curvature of the lens and its optical center is called........

a-focal length　　　b-principle axis　　c-secondary axis　　　d-radius of curvature

31-Spindle fibers appear during cell division in the................

a-prophase　　　　　b-metaphase　　　　c-anaphase　　　　d-telophase

32-...............is used to treat short sightedness.

a-convex lens　　　　b-concave lens　　　c-convex mirror　　d-concave mirror

33-The rate of change in speed is the.................

a-distance　　　　　b-mass　　　　　c-acceleration　　　　d-force

34-The vegetative reproduction occurs in plant without need of...............

a-stems　　　　b-seeds　　　　　c-roots　　　　d-leaves

35-The focal length of spherical mirror equals..............its radius of curvature.

a-double　　　　b-half　　　　c-quarter　　　　d-four times

36-If the uniform velocity of a car is 72 km/h, this means that its velocity equals

a-20 m/sec　　　　b-25 m/sec　　　　c-18 m/sec　　　　d-40 m/sec

37-A student takes a time of 10 minutes to transfer from his home to the school moving by average velocity 2 m/sec, which of the following equals the distance between his home and the school

a-48 m　　　　b-48 m　　　　c-1.2 km　　　　d-3.6 km

38-Which of the following graphical relation represents the moving of a body by uniform acceleration
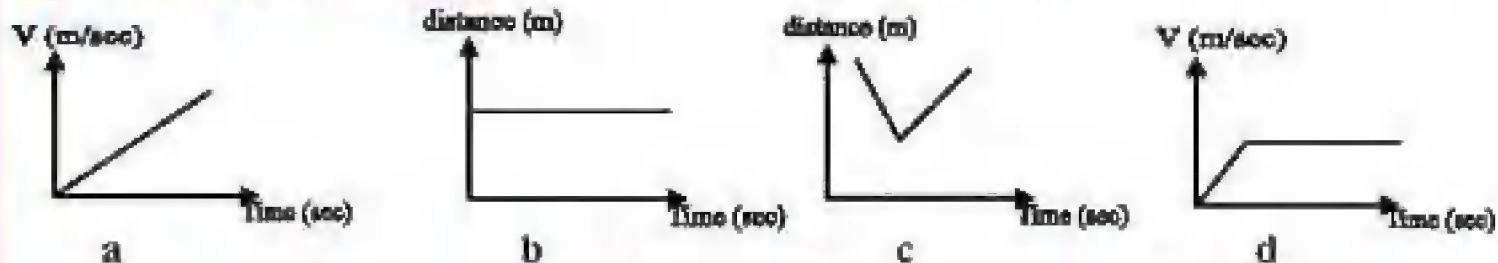
39-In the opposite figure a body starts his motion from the point (a) directed to the south to the point (b) he covers a distance of 40 m then he is directed to the east to the point (c) which far 30m a part from the point (b) so:

a)The value of the body displacement equals:

1-The length of ab　　　　　　　2-The length of bc

3-The length of ac　　　　　　　4-The length of ab + bc

4
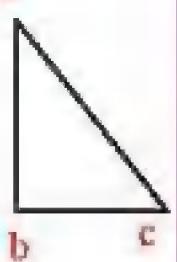
b)the length of the distance covered equals......

1-The length of ab   2-The length of bc

3-The length of ac   4-The length of ab + bc

40-If the value of the speed (V) $= \frac{d1+d2+d3}{t1+t2+t3}$ this means that this speed is............

a)average speed   b)increasing   c)nil   4)decreasing

41-Romans use a huge optical piece to burn the sails of enemies ships by using sun rays, what is the suitable optical piece to do this action

a)convex mirror   b)concave mirror   c)plane mirror   d)concave lens

42-Reproduction by spores occurs in all of the following organisms except............

a)star fish   b)algae   c)bread mold   d)mushrooms

43-If a light ray falls on a convex lens and passing through its focus, so it......

a) Passes in a straight line without deviation

b) Refracts parallel to the principle axis

c) Passes from the optical center in a straight line

d) No correct answer

44-If the focal length of a concave lens is 6 cm, so the radius of curvature is............

a)3 cm   b)6 cm   c)9 cm   d)12 cm

45-Reproductive cells resulted from the cell division by................

a)reduction   b)meiosis   c)mitosis   d)a and b together

46-The centromere of each chromosome is divided vertically, then the two chromatids are separated from each other in the........

a)prophase   b)telophase   c)anaphase   d)metaphase

47-The unicellular protozoans such as amoeba and paramecium reproduce by............

a)binary fission   b)budding   c)regeneration   d)spores

48-In the vegetative reproduction, the produced individuals are similar to their.....

a)parent individual   b)both parents   c)zygote   d)no correct answer

49-It contains genetic material from both parents and grow to form an individual carries characters from both parents, it is.................

a)the gamete   b)the zygote   c)the cytoplasm   d)the chromosome

50-The process by which the living organism produces new individuals with genetic properties similar to the parent individuals is called.................

a)sexual reproduction   b)asexual reproduction

c)vegetative reproduction   d) b and c

51-An incident ray falls on a reflection surface at angle

a)zero   b)90⁰   c)180⁰   d)30⁰

5
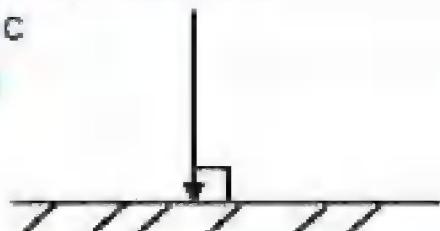
52-The scientist who established the nebular theory is..............
a)chamberlain   b)moulten   c)Alfred hale   d)la place

53-Virtual image is formed by...............
a)plane mirror   b)concave lens   c)convex mirror   d)all the previous

54-If the body moves from rest with uniform acceleration, so its final speed is determined from the relation...............
a)$\dfrac{\Delta v_1}{t}$ b)$\dfrac{\Delta t}{t}$ c)$\dfrac{\Delta a}{t}$ d)a x Δ t

55-When an object is put at the focus of convex mirror the image formed is........
a)real and dimensioned   b)real and equal to the object
c)real and enlarged   d)no correct answer

56-The two gases which produce galaxies, stars and planets over millions of years are........
a)hydrogen and CO_2 b)hydrogen and helium
c)oxygen and CO_2 d)oxygen and helium

57-An object is placed at 25 cm from a convex lens of focal lens 20 cm. The image of the object is formed at distance .... cm from the lens.
a)40   b)50   c)10   d)15

58-.................theory assumed that the origin of the solar system is from the explosion of the expanded part of the sun and forming a gaseous line of a great length from the sun due to the huge star approached to it.
a)Nebular   b)big bang   c)Crossing over   d)modern

59-A body was put in front of a plane mirror at distance 4 meter and an image is formed behind the mirror. If the mirror is moved towards the body by one meter. The distance between the first and second image is................meter.
a)1   b)3   c)2   d)4

60-The asexual reproduction in bread mold occurs by.....................
a)binary fission   b)sporogony   c)vegetative reproduction   d)regeneration

61-.....................contains genetic material from both parents and grow to form an individual carries characters from both parents
a)gamete   b)zygote   c)cytoplasm   d)chromosomes

62-The meiosis division happens in cells of the...............
a)liver   b)skin   c)bones   d)ovary

63-Long sightedness causes collection of the rays ....the retina
 a)on   b)behind   c)in front   d)under

64-.....................is from the causes of cataract.
a)Genetic readiness   b)old age   c)effect of drugs   d)all the previous

65-Reproductive cells resulted from the cell division by...........
a)binary fission   b)meiosis   c)mitosis   d)no correct answer

3rd Prep final revision

Choose the correct answer;

1-distance covered in a unit of time (in one sec) is ....
a. displacement   b. Speed   c. velocity   d. acceleration

2- ....is the point that is in the middle of the reflective surface of the mirror.
a.Pole   b. Optical center   c. Focus   d. Radius

3- .... is the wide space that contains galaxies and everything.
a.Planets   b. Moon   c. Solar system   d. Universe

4-Asexual reproduction in yeast fungus take place by...............
a-budding.   b-gametes.   c-binary fission.   d-regeneration

5- During the motion of a train, it covers 140 m in the 1st minute, 100 m in the 2nd minute. So the average speed of the train is ....m/sec
a.5   b.1   c. 4   d. 2

6- The crossing over happen in ....
a-telophase.   b-anaphase   2 c-metaphase.   d-prophase 1.

7-Measuring the speed of an object depends on the position of the observer.
a. displacement   b. Relative speed   c. velocity   d. acceleration

8- A mirror that its reflecting surface is a part of the inner surface of the sphere.
a.Plane Mirror   b. Convex mirror   c. Concave mirror   d-Diverging mirror.

9- The scientist who established the Nebular theory is ....
a-Newton.   b-Laplace.   c-Molton.   d-Chamberlain.

10- During the mitotic division of a body cell 3 times, it will produce ....cells.
a.4   b. 6   c.8   d. 10

11- A car starts its motion from rest and moves in a straight line by increasing acceleration= 2m/sec2, So the time needed to reach the speed = 40 m/sec is ....sec.
a.5   b.10   c.15   d.20

12- The sexual reproduction involves .... parents.
a- 1   b- 2   c- 3   d-4

13-.............is the quantity that has a magnitude and direction.
a.Scalar   b. Vector   c-Distance   d-Speed

14- Is the straight line that passes by the center of curvature and the pole of the mirror.
a.Focus   b. Image   c. Principle axis   d. Secondary axis

15- The two elements that were produced after the big bang are ....
a.H & Hg   b. Na & He   c. Fe & H   d. H & He

16- The meiosis division happen in .... Cells.
a-liver.   b-ovary.   c-testis.   d-ovary and testis.

17- If an object moved east for 10 m then moved west for 2 m, so the displacement is equal .... m

a. 2   b. 6   c. 8   d. 10

18- .... is formed when male and female gametes combine together.

a- Sperm   b- Ovum   c- Zygote   d- Pollen grain

19- The length of the shortest straight line between 2 points.

a. displacement   b. Speed   c. velocity   d. acceleration

20- Convex lens is placed in passage of sun rays, a very small image is formed at a distance 10 cm. The same lens is used to obtain virtual, enlarged and erect image of a body. In which distance the body is found?

a-5 cm.   b-10 cm.   c-15 cm.   d-20 cm.

21- .... is a flat gaseous disc that formed our solar system.

a-Galaxy   b-Earth   c-Moon   d- Nebula

22- .... is the process in which the living organism produces individuals identical in genetic traits of the parent.

a-Fertilization   b-Gamete formation   c-Asexual reproduction   d-Meiosis

23- A car moves at speed 36 km/hour. So the distance by meter that covered in 5 seconds is .... m/sec

a. 30   b. 40   c. 50   d. 60

24- .... is a cellular division that produces sperms and ova.

a. Mitosis   b. Meiosis   c. Budding   d. Regeneration

25- The change in the object's speed in one second is ....

a. displacement   b. Speed   c. velocity   d. acceleration

26- The short-sighted person needs a medical eye glasses with ....

a. concave lens   b. convex lens   c. concave mirror   d. convex mirror

27- A great explosion and expansion since 15000 million years that forms the universe.

a. Big bang   b. Crossing star   c. Nebula   d. Galaxy

28- The ability of the animal to compensate its missing parts.

a. Spores   b. Binary fission   c. Budding   d. Regeneration

29- A phase in which chromosomes are arranged along the cell equator.

a. Prophase   b. Metaphase   c. Anaphase   d. Telophase

30- An object is placed in front of a concave mirror at a distance less than double the focal length, and more than the focal length, so the properties of the image formed are ......

a. virtual , enlarged image   b. real , small image

c. real , enlarged image   d. virtual , small image

31- .... is the ratio between the total distance and total time of an object.

a. Displacement   b. Average speed   c. Average velocity   d. Acceleration

32- If the focal length of a convex lens =10 cm so its radius will be .... cm.

a. 5   b. 10   c. 15   d. 20

33- Stars move in fixed orbits around the centre of the ....

a.Solar system   b. Crossing star   c. Nebula   d. Galaxy

34- It is the combination of male and female gametes to form a zygote.

a.Fertilization   b. Binary fission   c. Budding   d. Regeneration

35- A phase in which some important vital processes occur that prepare the cell for division and the genetic material is duplicated.

a.Prophase   b. Metaphase   c. Anaphase   d. Interphase

36- On a straight line their is a moving bus whose speed changes from 6 m/s to 12 m/s ^{during} 3 seconds. So the acceleration= ....m/sec^2

a.1   b. 2   c.3   d. 4

37- The (speed-time) graph of uniform speed is represented by a straight line parallel to the .... axis.

a.speed   b. distance   c. time   d. displacement

38- A parallel light ray to the principle axis of a concave mirror will reflect through ....

a.Pole   b. Optical center   c. Focus   d. Radius

39- In metaphase .... are arranged along the cell equator.

a.Chromatids   b .Chromosomes   c .Gametes   d. Spores

40–Milky way is a ....galaxy.

a.spherical   b. oval   c. spiral   d–No correct answer

41-Gametes contain .... the number of chromosomes that is found in the somatic cell.

a.same   b. half   c. quarter   d. double

42-...........is the value of displacement at a unit time and it is a vector quantity.

a. displacement   b. Speed   c. velocity   d. acceleration

43- If the angle between the incident ray and the reflecting surface is 20 so the angle of reflection equals ....

a.50   b.60   c.70   d.80

44- The origin of the planets of the solar system according to the crossing star theory is the ......

a.Sun   b. Meteors   c. Nebula   d. Galaxy

45- The chromosomes chemically consist of ....

a. Nucleic acid (DNA)   b. proteins   c. carbohydrates   d. a and b

46- The object's speed changes by equal values through equal periods of time.

a. Displacement   b. Speed   c. Velocity   d. Uniform acceleration

47- A diseased case results due to the formation of image behind the retina of the eye.

a. Short sightedness   b. Long sightedness   c. Darkness of eye lens   d. Cataract

48- When an object moves at constant uniform speed. This means that its acceleration= ....

a.1   b. 2   c. 3   d. zero

49- The angle between the incident light ray and the normal is angle of ....

a.incidence   b. reflection   c. refraction   d. normal

50- The solar system is located in one of the .... of the milky way

a.centers   b.spiral arms   c. galaxies   d.moons

51- Bacteria and amoeba reproduce asexually by ....

a.Fertilization   b. Binary fission   c. Budding   d. Regeneration

52- The cells resulting from the meiotic division and have half (haploid) number of chromosomes.

a.Mitosis   b. Meiosis   c. Gametes   d. Zygote

53-If the distance between you and your image in plane mirror is 10 m, so the distance between you and the mirror is ....

a.5 m   b. 10 m   c. 15 m   d. 20 m

54- The actual path that is covered by the object is the ....

a. displacement   b. Speed   c. distance   d. acceleration

55- Image that can be formed on a screen is .... Image.

a.real   b. virtual   c. upright   d. erect

56-In the modern theory of the solar system, the explosion of the star that was near the sun is due to ....

a.the crossing star   b. big bang   c. nuclear reaction   d. nebula

57- The .... in meiosis division leads to the variation of genetic traits.

a.crossing over   b. interphase   c. zygote   d. asexual reproduction

58- Producing a new plant by mitotic division without seeds is ....

a.Fertilization   b. Vegetative reproduction   c. Budding   d. Regeneration

59- A body is placed in front of a convex lens at a certain distance from its optical center, no image is formed for the object. That is due to the body is placed at ....

a.Pole   b. Optical center   c. Focus   d. Radius

60-During the cell division, spindle fibers appears in ....

a.Prophase   b.Metaphase   c.Anaphase   d.Telophase

61-We get real enlarged image by ....

a.Plane mirror   b.Concave mirror   c.Convex mirror   c.Concave lens

62-From the vector physical quantities................................

a.Distance   b.Time   c.Mass   d.Displacement

63-The ....theory explains the origin of the universe 15000 million years ago.

a.Nebular   b.Big bang   c.Crossing star   d.Modern theory

64-The body moves with decelerating motion when it ....

a.Starts motion from rest   b.Increases speed

c.Decreases speed   d.Doubles speed

65-The focal length of a convex lens whose diameter is 20 cm equals ....

a.20 cm   b.15 cm   c.10 cm   d.5 cm

66-The virtual image is always.............................

a.Inverted   b.Can be received on a screen   c. Erect   d.Equal in size to the object.

67-The average speed quals zero when the observer is moving in ....

a.Same direction   b.Opposite direction

c.Same direction and same speed   d.Opposite direction and same speed.

68-All the following are vector physical quantities except ....

a.Displacement   b.Acceleration   c.Velocity   d.Distance

69-Meiotic division takes place in....................cells

a.Liver   b.Skin   c.Testis   d.Muscles

70-According to the crossing star theory, the origin of the solar system is ....

a.Nebula   b.Sun   c.Another star   d.The Earth

71-Short sightedness is treated with ....

a.Convex mirror   b.Concave mirror   c.Concave lens   d.Convex lens

72-Stars and galaxies are made of ....gases.

a.Hydrogen and oxygen   b.Hydrogen and nitrogen

c.Hydrogen and helium   d.Carbon dioxide and hydrogen

73-Source of genetic variation is ....reproduction.

a.Vegetative   b.Sexual   c.Asexual   d.Budding

74-Placing an object at distance 70 cm from a concave mirror, whose focal length is 40 cm ,the image is formed at ....from its pole.

a.Less than 40 cm   b.40 cm   c.80 cm   d.More than 80 cm

75-On pressing the breaks of a moving car, it moves with .... motion

a.Regular speed   b.Zero initial speed   c.Accelerating   d.Decelerating

76-Pilots take in consideration the .... of wind during their trip.

a.Average speed   b.Velocity   c.Relative speed   d.Regular speed

77-Point in the middle of the spherical mirror is called.............................

a.Pole of the mirror   b.Center of the mirror   c.Focus of the mirror   d.Optical center

78-The two factors that describe the motion of body are ....

a.speed & time   b. distance & time   c. area & time   d. displacement &speed

79- From vector quantities ....

a. mass   b. time   c. length   d. displacement

80. From living organism that reproduce by budding ....

a.mushroom   b. yeast fungs   c. star fish   d. amoeba

81. Spherical mirror its radius 20 cm, its focal length equal..................

a.10   b.20   c. 40   d. 60

82. The light ray which fall passes through the optical center of convex lens it ......

a.refract through the focus   b. refract parallel to principal axis

c. passes without any refraction   d.reflect on it self

83. The solar system is located in ....

a. the center of galaxy   b. the edge of galaxy   c. nebula

84. The light ray which fall passes through the focus of concave mirror it reflect .....

a. through the focus   b. parallel to principal axis   c. on itself   d. through its pole

85. From scalar quantities ....

a. mass   b. acceleration   c. velocity   d. displacement

86. A body is put in the front of concave length an equal image is formed at a distance 10 cm from the pole of mirror so its focal length = ...

a. 5   b. 40   c. 10   d. 20

87. Universe is formed from the merging of ....&.......... particles.

a. Oxygen& nitrogen   b. Oxygen& hydrogen

c. nitrogen &helium   d. hydrogen& helium

88. The offspring produced from asexual reproduction carryout the traits ....the parent

a. differ from   b. identical to   c. carry both male and female traits

89. The phase that included adverse changes in mitosis cell division is ....

a. prophase   b. metaphase   c. anaphase   d. interphase

90. The ability of some animals to compensate their missing parts is....................

a. budding   b. binary fission   c. vegetative   d. regeneration

91. A gaseous flaming sphere that form solar system............

a. nebula   b. galaxy   c. universe   d. big bang

92. A light ray fall on a plane mirror with incident angle equal 30, So the reflected angle equal

a. 20   b. 30   c. 60   d. 90

93. A body starts its movement from rest after 2 sec. its speed reaches to 10 m/s ,so the change in the speed of body after 2 sec=..................m/s2.

a. 5   b. 8   c. 10   d. 20

94. The sight defect which is resulted from the decrease in eye ball diameter is................

a. short-sightedness   b. cataract   c. long-sightedness   d. blindness

95. The ratio between total distance to the total time need to cover this distance is ....

a. final speed   b. displacement   c. average speed   d. relative speed

96. It is the actual length that the body cover from initial position to its final position

a. final speed   b. displacement   c. average speed   d. distance

97. A body of length 10 cm is put in the front of concave lens at a distance 4 cm from its optical center, so the length of the body's image equal..................... cm

a. 3   b. 10   c. 15   d. 20

97. After 10000 million years from big bang the .... is formed

a. sun   b. ancestral of galaxies   c. earliest life   d. no correct answer

98. ....scientist established the modern theory.

a. Laplace   b. Chamberlain & Molten   c. Fred Hoyle

99. The phase at which chromosomes pairs are arranged along cell equator is ....
a. interphase   b. prophase1   c. metaphase   d. metaphase1

100. In animal cell Spindle fiber is formed from...............
a. cytoplasm   b. centrosome   c. nucleus   d. centromere

101. A car move with speed =10 m/s find its relative speed related to an observer move with the same speed and same direction................................... m/s
a. 0   b. 10   c. 20   d. 30

102. A body of length 5 cm is put in the front of concave mirror at a distance 4 cm from its optical center, an image virtual, erect and magnified image is formed for the body so the body is put at ....
a. distance more than double focal length   b. distance between center and focus
c. distance less than focal length

103. .... theory explain the origin of universe .
a. nebular   b. big bang   c. crossing star   d. modern

104. In crossing star theory the solar system was a................
a. nebula   b. sun   c. other star   d. other planet

105. The type of reproduction in plants which not reproduce by seeds ....
a. vegetative   b. budding   c. regeneration   d. binary fission

106. In plant cell Spindle fiber is formed from.....................
a. cytoplasm   b. centrosome   c. nucleus   d. centromere

107. If the relative speed of a car is 50 km/h relative to an observer in a bus move in the same direction at 70 km/h therefore the actual speed of this car is ....km/h
a. 20   b. 70   c. 120   d. 170

108. If the angle between the incident ray and the surface of mirror is 130 , therefore the angle of reflection = ...
a. 40   b. 50   c. 90   d. 130

109. Fred Hoyle assumed that the sun controls in the orbit of planets around it due to ....of the sun
a. temperature   b. rotational speed   c. the attraction force   d. glowing

110. If the nucleus of maize pollen grain contains 10 chromosomes then the nucleus of somatic cell of the plant contain ....chromosomes
a. 5   b. 10   c. 15   d. 20

111. The source of genetic variation is due to ....reproduction
a. sexual   b. a sexual   c. vegetative   d. regeneration

112. A ....is used to correct the short-sightedness defect
a. convex lens   b. convex mirror   c. concave lens   d. concave mirror

Choose the correct answer :

1. The crossing over phenomenon takes place at the end of ....
   a. prophase I.   b. metaphase I.   c. anaphase I.   d. telophase I.

2. A body of length 4 cm is placed at a distance of 8 cm from a convex mirror, so the length of the formed image becomes ....
   a. 16 cm.   b. 8 cm.   c. 4 cm.   d. less than 4 cm.

3. The ability of some animals to compensate their missing parts is called the ....
   a. budding.   b. regeneration.   c. sporogony.   d. sexual reproduction.

4. The line between the centres of curvature of the lens passing by the optical centre of the lens is called the ....
   a. focal length.   b. principal axis.   c. secondary axis.   d. radius of curvature.

5. The scientists believe that the universe emerged from a massive explosion and it is in ....
   a. continues contraction.   b. contraction then expansion.
   c. expansion then contraction.   d. continues expansion.

6. If the speed of a car is 72 km/hour, this means that its speed equals .... m/s.
   a. 18   b. 20   c. 40

7. If an object is placed at a distance less than the focal length of a concave mirror, a virtual upright .... image is formed.
   a. diminished   b. equal   c. magnified

8. The spindle filaments appear during cell division in ....
   a. telophase.   interphase.   c. prophase.

9. The image of the object that lies at the centre of curvature of a concave mirror is ....
   a. real, inverted and enlarged.   b. real, upright and equal to the object.
   c. real, inverted and equal to the object.   d. virtual, upright and equal to the object.

10. If the chromosomal number in the male gamete of an organism is 20 so, the chromosomal number in the liver cell equals ....
    a. 5 chromosomes.   b. 10 chromosomes.   c. 20 chromosomes.   d. 40 chromosomes.

11. .... established the crossing star theory.
    a. Laplace   b. Alfred Hale   c. Hubble   d. Chamberlain

12. The centromere of each chromosome divides longitudinally and the spindle fibers contract in mitosis during ....
    a. prophase.   b. metaphase.   c. anaphase.   d. telophase.

Answers
1. prophase1
2. Less than 4
3. regeneration
4. b principal axis
5. continues expansion
6. (b) 20
7. c magnified
8. c prophase
9. c real, inverted, equal to the object
10. (d) 40 chromosom
11. (d) chamberlain
12. (c) anaphase

1) ظاهرة العبور تحدث في نهاية الطور التمهيدي الأول

2) جسم طوله 4cm وُضع على مسافة 8cm من مرآة محدبة
* (الجسم عند أي موضع مهما (pole قطب) المرآة المحدبة
تتكون له صورة مصغرة ، لذا نختار less than 4cm (د)
يعني لازم الصورة يصبح طولها أقل من طول الجسم (أقل من 4cm)

3) قدرة بعض الحيوانات على تعويض الأجزاء المفقودة منها
يسمى (التجدد)

4) المستقيم الفاصل بين مركزي تكور وجهي العدسة مروراً بالمركز
البصري يسمى (المحور الأصلي) Principal axis

5) يعتقد العلماء أن الكون نشأ من انفجار عظيم وهو في حالة
(تمدد مستمر continues expansion)

6) اذا كانت سرعة السيارة 72 Km/h فعند تحويلها بـ m/s
(نضرب x $\frac{5}{18}$) ∴ $72 × \frac{5}{18}$ = 20 m/s

7) اذا وضع جسم على مسافة أقل من البعد البؤري لمرآة (مقعرة)
تتكون صورة تقديرية معتدلة و (مكبرة magnified)

8) تظهر خيوط المغزل أثناء الانقسام الخلوي في الطور
(التمهيدي Prophase)

9) صورة جسم يقع عند مركز تكور مرآة مقعرة {حقيقية، مقلوبة،
مساوية الجسم}

10) اذا كان عدد الكروموسومات في المشيج المذكر لجسم كائن حي
هو 20 ، فإن عدد الكروموسومات في خلية الكبد لنفس الكائن
تساوى ضعف عدد الكروموسومات في المشيج = ٢ × ٢٠ = ٤٠

11) العالم تشمبرلين chamberlain هو مؤسس نظرية النجم العابر (د)
(تشمبرلين ومولتن) أصحاب نظرية النجم العابر.

12) سنتروسوم كل كروموسوم ينقسم طولياً وتنكمش خيوط المغزل
في الانقسام الميتوزي أثناء الطور (الانفصالي anaphase)

Choose the correct answer:

13 The number of chromosomes in the gamete is .... the number of chromosomes in the original cell.

a. equal to   b. half   c. quarter   d. double

13 (b) half

14 When the body covers equal distances at unequal periods of time, the speed will be .....

a. regular.   b. decelerated.   c. accelerated.   d. irregular.

14 (d) irregular

15 If the distance between the two centres of curvature of the lens is 20 cm. , this means that the focal length is ....

a. 5 cm.   b. 10 cm.   c. 15 cm.   d. 20 cm.

15 (a) 5 cm

16 All the following cells contain full copy of genetic material except ....

a. spore.   b. bud.   c. zygote.   d. pollen grain.

16 pollen grain

17 The point at the middle of the reflecting surface of a spherical mirror is called ....

a. focus of mirror.   b. pole of mirror.

c. centre of curvature of mirror.   d. face of curvature of mirror.

17 (b) Pole of mirror

18 The uniform acceleration means that the object speed .... by equal values through equal periods of time.

a. increases only   b. decreases only   c. increases or decreases   d. doesn't change

18 (c) increases (or) decreases

19 From the scalar physical quantities is the ....

a. acceleration.   b. time.   c. Velocity   d. displacement.

19 time

20 The object moves at a constant (uniform) speed when ....

a. it moves at a constant acceleration.   b. it covers equal distances at unequal times.

c. it covers equal distances at equal times.   d. no correct answer.

20 (c) it covers equal distances at equal times

21 A concave mirror with a focal length of 20 cm, and the object is placed at a distance of 50 cm from the mirror, the image is formed at a distance ....

a. more than 40 cm.   b. more than 20 cm and less than 40 cm.

c. equals 20 cm.   d. equals 60 cm.

21 (b) more than 20 cm and less than 40 cm

22 Short-sightedness leads to collect rays .... the retina.

a. in front of   b. behind   c. above   d. below

22 (a) (in) front of

23 A convex lens of 50 cm focal length, an object is placed at a distance of 100 cm from it, so its image is formed at ....

a. 150 cm.   b. 100 cm.   c. 50 cm.   d. 80 cm.

23 (b) 100 cm

24 The number of chromosomes in a female gamete is .... the number of chromosomes in the original cell.

a. quarter   b. half   c. the same   d. double

24 (b) half

25 From the reasons of cataract is ....

a. genetic readiness.   b. old age.

c. side effects of drugs.   d. all the previous answers.

25 (d) all the previous answers

26 After few minutes of the Big Bang, the percentage of hydrogen gas was .... % in the universe.

a. 25   b. 50   c. 75   d. 100

26 (c) 75%

13) عدد الكروموسومات فى المشيج (نصف) عدد الكروموسومات من الخلية الأصلية (خلية المناسل)

14) عندما يقطع الجسم مسافات متساوية فى أزمنة غير متساوية ، تكون السرعة (غير منتظمة irregular)

15) اذا كانت المسافة بين مركزى تكور وجهى عدسة ٥ سم قياسهما يعنى أن البعد البؤرى = 5cm

16) جميع الخلايا التالية تحتوى على نسخة كاملة من المادة الوراثية ماعدا
خلية حبة اللقاح pollen grain فإنها تحتوى على نصف عدد الكروموسومات الموجود بالخلية الأم أى نصف المادة الوراثية)
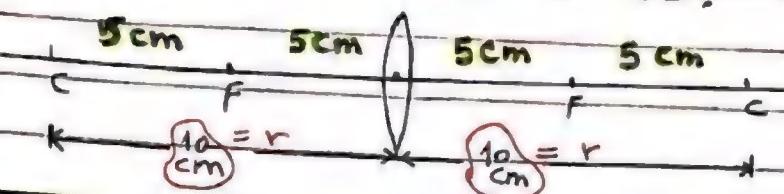
17) النقطة التى تتوسط السطح العاكس لمرآة كرية تسمى (قطب المرآة Pole of mirror)

18) العجلة المنتظمة تعنى أن سرعة الجسم تزداد أو تقل بمقادير متساوية خلال فترات زمنة متساوية

19) من الكميات الفيزيائية القياسية (الزمن Time)

20) الجسم يتحرك بسرعة منتظمة ثابتة عندما يقطع مسافات متساوية فى أزمنة متساوية

21) مرآة مقعرة البعد البؤرى لها 20cm ، وضع الجسم على مسافة 50cm من المرآة تكون الصورة على مسافة معينة ::
البعد البؤرى focal length = 20cm .. f = 2 = r = 40cm
:: الجسم أبعد من (ر) مركز تكور المرآة :. الصورة تتكون بين (ع و F)
أى على مسافة أكبر من 20cm وأقل من 40cm

22) قصر النظر يؤدى إلى تجمع الأشعة أمام الشبكية لزيادة قطر كرة العين

23) عدسة محدبة بعدها البؤرى 50cm ، وضع جسم على مسافة 100cm من العدسة أى عند (ر) لذا تتكون الصورة أيضا عند (ر) على مسافة 100cm

24) من أسباب مرض الكزاز (جميع ماسبق)   25) نفس اجابة (13)

26) بعد عدة دقائق من الانفجار العظيم نسبة H₂ فى الكون كانت 75%

27. The convex (converging) lens ....
  a. has the same thickness.
  b. is thin at the centre and more thickness at the tips.
  c. collects the light rays falling on it.   d. diverges the light rays falling on it.

28. The (distance-time) graph for a regular motion at a constant (uniform) speed is represented by a straight line ....
  a. passing through the origin point.
  b. parallel to the time axis.
  c. parallel to the distance axis.
  d. cuts the time axis and the distance axis.

29. The focal length of the mirror is the distance between ....
  a. the centre of curvature of the mirror and its pole.
  b. the centre of curvature of the mirror and any point on its surface.
  c. the focus of the mirror and any point on its surface.
  d. the focus of the mirror and its pole.

30. From the examples of the vector physical quantities is ....
  a. distance.   b. mass.   c. displacement.   d. time.

31. The binary fission of the asexual reproduction occurs in ....
  a. mammals.   b. euglena.   c. reptiles.   d. the flowering plants.

32. In case of motion that is described as movement at irregular speed, in this case, it is useful to refer to another term which is the .... speed.
  a. uniform   b. scalar   c. vector   d. average

33. From the scalar physical quantities that it is enough to identify its magnitude only is ....
  a. the time.   b. the velocity.   c. the force.   d. the acceleration.

34. The chromatin reticulum condenses and appears in the form of long, thin and double strings in ....
  a. prophase.   b. metaphase.   c. anaphase.   d. telophase.

35. The meiosis occurs in .... cells.
  a. liver   b. testis   c. skin   d. bones

36. According to Laplace assumptions, the nebula gradually lost its heat, so ....
  a. its size contracted only.
  b. its revolving speed around itself increased only.
  c. it disappears.
  d. (a) & (b) are correct.

37. The two factors which can describe the movement of an object are ....
  a. speed and time.
  b. distance and time.
  c. area and time.
  d. displacement and speed.

38. If the angle of incidence of a light ray is 60° , so the angle between the incident ray and the reflected ray equals ....
  a. 60°   b. 45°   c. 180°   d. 120°

27. (c) Collects the light rays falling on it.

28. (a) Passing through the origin point

29. the focus of the mirror (and its pole.

30. (c) displacement

31. (b) euglena

32. (d) average

33. a) the time

34. a) Prophase

35. (b) testis

36. d (a) & (b) are correct.

37. b) distance and time

38. (d) 120°

27) العدسة المحدبة () المجمعة [تجمع الأشعة الساقطة عليها]

28) العلاقة البيانية (والمسافة ـ الزمن) لحركة منتظمة بسرعة منتظمة ثابتة تمثل بخط مستقيم (يمر بنقطة الأصل)

distance

(origin point) نقطة الأصل ← Time

29) البعد البؤري لمرآة هوالمسافة بين البؤرة الأصلية للمرآة Focus و (قطبها its pole)

30) من أمثلة الكميات الفيزيائية المتجهة (الإزاحة displacement)

31) الانشطار الثنائي للتكاثراللاجنسي يحدث في الأوليات الحيوانية مثل (اليوجلينا euglena)

32) في حالة الحركة التي توصف بأنها حركة بسرعة غيرمنتظمة ؛ يمكن التعبير عن هذه السرعة بمصطلح آخر وهو السرعة المتوسطة (average speed)

33) من الكميات الفيزيائية القياسية التي يكفي لوصفها معرفة مقدارها فقط هوالزمن

34) الشبكة الكروماتينية تتكثف وتظهر على شكل خيوط مزدوجة طويلة رفيعة في الطور(التمهيدى Prophase)

35) يحدث الانقسام الميوزى في خلايا (الخصية testis)

36) تبعاً لفروض نظرية (لابلاس) The nebula فإن السديم يفقد حرارته بالتدريج لذا (فـ) حجمه (ينكمش يتقلص)(طولوتزداد سرعة دورانه حول محوره لذا سنختار (فلا ه) أى رقم

37) العاملان اللذان يمكن بهما وصف حركة جسم هما المسافة والزمن .

38) اذا كانت زاوية سقوط شعاع ضوئي °60 فإن المزاوية بين الشعاع الساقط والشعاع المنعكس = (°120)

incident ray → reflected ray
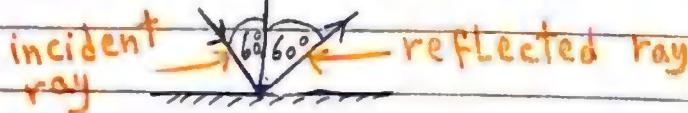
39. Galaxies gather in groups called

a. planets. b. clusters. c. ancestral galaxies. d. solar system.

39) (b) clusters

40. The spindle fibers in the animal cell are formed from the

a. centrosome. b. cytoplasm. c. nucleus. d. chromosomes.

40) (a) centrosome

41. The measuring unit of acceleration is ....

a. metre. b. metre/second. c. metre/second^2 d. kilometre/second.

41) (c) metre/second^2

42. The two gases which produced galaxies, stars and universe over millions of years are helium and ....

a. carbon dioxide. b. oxygen. c. nitrogen. d. hydrogen.

42) d, hydrogen

43. Mitotic division happens in cells of the ....

a. two testes. b. two ovaries. c. liver. d. (a) and (b) together.

43) (c) Liver

44. The image formed by a plane mirror is always ....

a. virtual, upright and enlarged. b. virtual, upright and equal to the object.

c. real, reversed and equal to the object.

44) (b) virtual, upright (and) equal to the object

45. Bread mould fungus reproduces asexually by ....

a. binary fission. b. budding. c. sporogony.

45) (c) sporogony

46. Astronomers use special equipment to study the Sun, this equipment is the ....

a. glasses. b. telescope c. lens.

46) (b) telescope

47. Romans used a huge optical piece to burn the sails of enemies' ships by using sun rays. What is the suitable optical piece to do this action ? ....

a. Convex mirror. b. Plane mirror. c. Concave mirror.

47) (c) concave mirror

48. To determine the mass, we must know ....

a. the magnitude and the direction.

b. the magnitude only.

c. the magnitude and the measuring unit.

d. the magnitude, the direction and the measuring unit.

48) (c) the magnitude and the measuring unit

49. To determine the focal length of a lens, the mathematical relationship .... can be used.

a. $f = r \times 2$ b. $f = \frac{2}{r}$ c. $f = \frac{1}{2}$ diameter. d. $f = \frac{1}{4}$ diameter.

49) (d) $f = \frac{1}{4}$ diameter

50. Meiotic division occurs in flowering plants in the anther to produce ....

a. pollen grains. b. ova. c. sperms. d. chromosomes.

50) (a) Pollen grains

51. The graph that represents the movement of an object at zero acceleration is ....
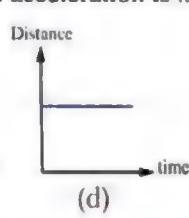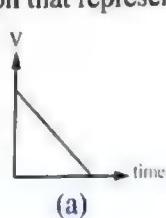
51) (c)

(a) (b) (c) (d)

39) تتجمع الخلايا من مجموعات تسمى (عناصر المجرات)

40) خيوط المغزل في الخلية الحيوانية تتكون من السنتروسوم (الجسم المركزي)

41) وحدة قياس التعجلة m/s^2

42) الغازان اللذان أنتجا المجرات والنجوم والكواكب وعلى سطح النجوم الهيليوم (والهيدروجين)

43) الانقسام الميتوزي يحدث في خلايا الكبد

44) الصورة المتكونة بواسطة مرآة مستوية دائماً تكون تقديرية ومعتدلة ومساوية للجسم.

45) قطر عفن الخبز يتكاثر لا جنسياً بالجراثيم

46) علماء الفلك يستخدمون معدات خاصة لدراسة الشمس تسمى التلسكوب

47) ما هي القطعة الضوئية التي تم استخدامها لرفع أشرعة السفن
المرآة المقعرة Concave mirror لأنها تجمع الأشعة المتوازية
بعد سقوطها عليها في بؤرة focus لذا تم تسليط هذه الحزم
بزاوية يجعل (البؤرة أو نقطة يجمع الأشعة) هي أشرعة السفن
فما حترقت وعرقت السفن

48) لتعيين الكتلة يكفي معرفة مقدارها ووحدة قياسها.

49) لتعيين البعد البؤري لعدسة (focal length) فما العلاقة الرياضية المستخدمة ص $p = \frac{1}{2} r$ و $r = \frac{1}{2}$ diameter
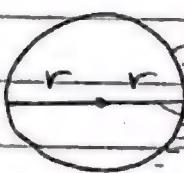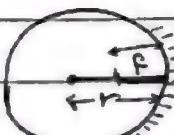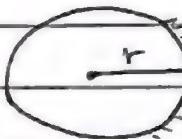
∴ $f = \frac{1}{4}$ diameter

50) الانقسام الميوزي يحدث في النباتات الزهرية من أجل لإنتاج حبوب اللقاح (الأمشاج المذكرة من النبات male gamete

51) الشكل البياني يمثل حركة جسم بعجلة صفر
يعني سرعة منتظمة (ثابتة)
يعني $ع_1 = ع_2$ $V_1 = V_2$
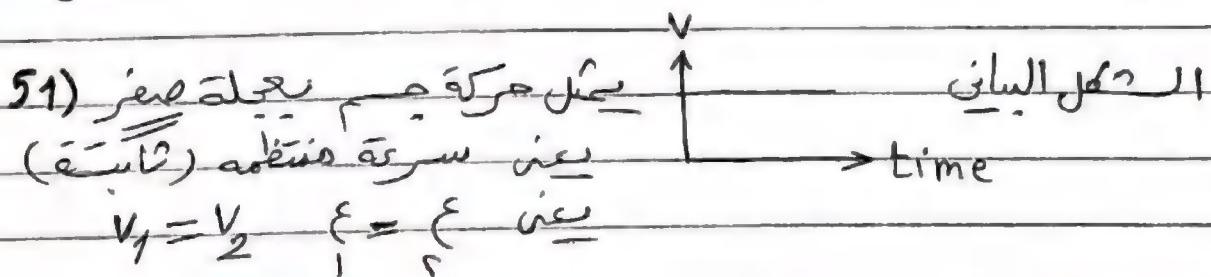
52. The incident light ray falling parallel to the principal axis of a concave mirror, ...

a. reflects passing through the centre of curvature of the mirror.

b. reflects on itself.

c. reflects passing through the focus of the mirror.

d. reflects parallel to the secondary axis of the mirror.

52 (c) reflects passing through the focus of the mirror

53. The type of asexual reproduction that occurs in some fungi and algae is ....

a. regeneration.   b. spore propagation.   c. budding.   d. vegetative reproduction.

53 (b) spore propagation

54. In the opposite figure :
When an object moves from point (A) to point (B), the displacement from (A) to (B) equals .... cm.

a. $10\sqrt{2}$ b. 10   c. 20   d. 31.4

54 $\sqrt{(10)^2 + (10)^2}$
$= \sqrt{100 + 100}$
$= 14.14 =$
@ $10\sqrt{2}$
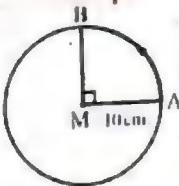
55. If car (A) moves with a speed 80 km/h and car (B) moves with a speed 50 km/h in the same direction, so the speed of car (A) relative to a passenger in car (B) is .... km/h.

a. 50   b. 80   c. 30   d. 130

55 (c) 30

56. The image formed by using a concave lens is ....

a. real, enlarged and inverted.   b. virtual, diminished and upright.

c. real, enlarged and upright.   d. virtual, diminished and inverted.

56 (b) virtual, diminished and upright

57. .... cells are not divided at all.

a. Skin   b. Red blood   c. Liver   d. Stomach

57 (b) Red blood

58. Asexual reproduction by spore propagation in fungi and algae occurs by producing ....

a. spores.   b. suckers.   c. cilia.   d. whips.

58 (a) spores

59. Reproduction by budding occurs in ....

a. mushroom.   b. yeast fungus.   c. bread mould fungus.

59 (b) yeast fungus

60. When the body moves by acceleration equals zero, this means that ....

a. the body's speed is variable.   b. the body's speed is uniform.

c. the body's acceleration is decreasing.

60 (b) the body's speed is uniform

61. The chromosome chemically consists of ....

a. carbohydrates.   b. nucleic acid (DNA).

c. nucleic acid (DNA) and protein.

61 (c) nucleic acid (DNA) and Protein

62. The Sun takes about .... million years to complete one rotation around the centre of the galaxy.

a. 200   b. 220   c. 230

62 (b) 220

(52) الشعاع الضوئي الساقط موازياً للمحور الأصلي لمرآة مقعرة ينعكس ماراً (بالبؤرة focus)
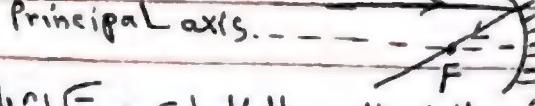
Principal axis. - - - - →

(53) نوع التكاثر اللاجنسي الذي يحدث في الطحالب والفطريات هو تكاثر بالجراثيم

(54) طبقاً لقاعدة فيثاغورث فإن $\vec{AB} = \sqrt{(\overline{AM})^2 + (\overline{BM})^2} = 14.14$

$= 10\sqrt{2}$ الاختيار الأول (a)

(55) سيارتا A، B تتحركان في نفس الاتجاه، المراقب observer هو B(car)

real speed of(A) = 80 km/h ، real speed of(B) = 50 Km/h

relative speed of car(A) = relative speed — speed of observer
of Car(A)   (Car B)

$= 80 - 50 = 30 Km/h$

(56) الصورة المتكونة باستخدام العدسة المقعرة دائماً تقديرية، مصغرة، معتدلة

(57) خلايا الدم الحمراء البالغة لا تنقسم

(58) تنتج جراثيم تنتج بسبب التكاثر اللاجنسي في الفطريات والطحالب

(59) التكاثر بالبرعم يحدث من قطع الخميرة

(60) عندما يتحرك الجسم بعجلة = صفر فهذا يعني أن سرعة الجسم منتظمة (ثابتة)

(61) يتكون الكروموسوم كيميائياً من حمض نووي DNA وبروتين

(62) تستغرق الشمس حوالي 220 مليون سنة لتكمل دورة واحدة حول مركز المجرة

63. If the uniform speed of a car is 90 km/hour this means that it covers a distance equals .... metre in 40 seconds.
a. 1000　　　b. 2000　　　c. 25　　　d. 4000

63) (a) 1000

64. In the opposite figure, the incident light ray reflects with an angle equals ....
a. 90°　　　b. zero°　　　c. 30°　　　d. 60°

64) (c) 30°

65. Our solar system is located in one of the .... arms of the Milky Way galaxy.
a. spiral　　　b. oval　　　c. straight　　　d. circular

65) (a) spiral

66. The parental individual disappears during reproduction by ....
a. sporangium.　　　b. regeneration.　　　c. binary fission.　　　d. budding.

66) (c) binary fission

67. In the opposite figure :
An object starts movement from point (A) to point (C) passing through point (B), so its displacement is ....
a. 70 m.　　　b. 30 m.　　　c. 50 m.　　　d. 40 m.
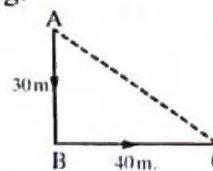
67) $\sqrt{(30)^2 + (40)^2}$ = 50 m. (c)

68. A body moves a distance of 20 metres in a straight line in the same direction, its displacement is ....
a. 20 m.　　　b. 40 m.　　　c. 80 m.　　　d. zero.

68) (a) 20 m

69. When a light ray falls perpendicular on a reflecting surface, its angle of reflection equals ....
a. 90°　　　b. 60°　　　c. 30°　　　d. zero

69) (d) zero

70. Galaxies are formed of groups of ....
a. moons.　　　b. constellations.　　　c. stars.　　　d. planets.

70) (c) stars

71. Which of the following graphs represents the movement of an object at a constant speed ? ....

Distance(m) — Time (second) — a.
Distance(m) — Time (second) — b.
Distance(m) — Time (second) — c.

71) (b)
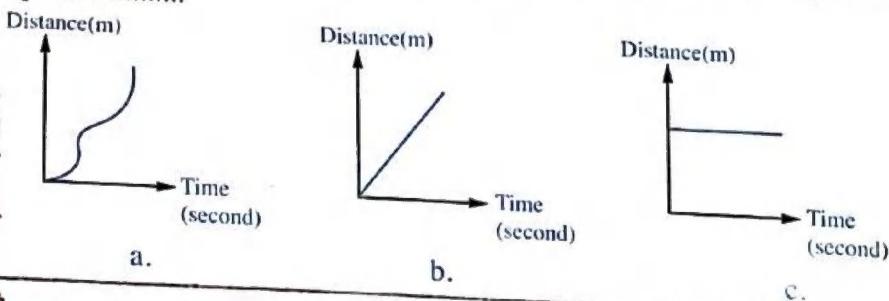
72. Chromatin reticulum (genetic material) intensifies and appears in the form of distinct chromosomes in a phase which is called .... from meiosis.
a. prophase 1　　　b. metaphase 1　　　c. telophase 1

72) (a) Prophase 1

73. The Hubble telescope was launched in April in ....
a. 1905　　　b. 1990　　　c. 1995

73) (b) 1990

ⓖ③ اذا كانت السرعة المنتظمة لسيارة تساوى 90 Km/h فهذا يعني انها

تقطع مسافة ...... متر فى 40 ثانية

① مطلوب التحويل من Km/h الى m/s بالضرب × $\frac{5}{18}$

اذن السرعة (s / m) = $90 \times \frac{5}{18}$ = $\boxed{25 \, m/s}$

المطلوب حساب ⓓ المسافة

$d = Ⓥ \times Ⓣ$ = $25 \times 40 = \underline{1000}$ m

ⓖ④

normal   incident ray

30°   60°

لمعرفة زاوية الانعكاس يجب معرفة اولاً زاوية السقوط والتى تساوى 60 - 90 = 30°

incident normal و لان زاوية السقوط incident هى الزاوية المحصورة بين normal و incident ray

angle و زاوية السقوط = زاوية الانعكاس .. زاوية الانعكاس = 30°

ⓖ⑤ المجموعة الشمسية أو النظام الشمسى يقع على إحدى الاذرع (الحلزونية) spiral لمجرة الطريق اللبنى

ⓖ⑥ الفرد الأبوى يختفى اثناء التكاثر اللاجنسى بالانشطار الثنائى binary fission

ⓖ⑦ displacement $\overrightarrow{AC}$ = $\sqrt{(AB)^2 + (BC)^2}$ = $\sqrt{(30)^2 + (40)^2}$ = $\underline{50 \, m}$.

ⓖ⑧ اذا تحرك جسم فى خط مستقيم وقطع مسافة معينة فإن مقدار المسافة هو نفسه مقدار الإزاحة لذا displacement = 20 m

ⓖ⑨ عند سقوط شعاع ضوئى عموديا على سطح عاكس فإن زاوية السقوط = زاوية الانعكاس = صفر

⑦⓪ المجرات تتكون من مجموعات من النجوم

⑦① اى من هذه الأشكال البيانية يمثل حركة جسم بسرعة منتظمة ثابتة؟ (ب)

⑦② تتكثف الشبكة الكروماتينية (المادة الوراثية) وتظهر على شكل كروموسومات فى الطور التمهيدى الاول من الانقسام الميوزى الأول

⑦③ تلسكوب هابل تم إطلاقه فى ابريل 1990م

⑦⑭ If the radius of curvature of a lens equals 40cm, so its focal length equals ....

a. 5cm   b. 10cm   c. 20cm   d. 40cm

⑭ (c) 20cm.

⑮ The building unit of the universe is the ....

a. galaxy.   b. star.   c. planet.   d. moon.

⑮ (a) galaxy

⑯ Reproduction by spores occurs in all of the following living organisms except ....

a. algae.   b. bread mould.   c. starfish.   d. mushroom.

⑯ (c) starfish

⑰ Virtual image is formed by ....

a. plane mirror.   b. concave lens.   c. convex lens.   d. all the previous answers.

⑰ (d) all the previous answers.

⑱ The Sun was born after .... million years from the Big Bang.

a. 1200   b. 3000   c. 10000   d. 5000

⑱ (c) 10000

⑲ A body is placed in front of a concave mirror at a certain distance from its pole, no image is formed on the screen that is due to the body is ....

a. placed at the focus.

b. placed at a distance less than the focal length of the mirror.

c. placed at a distance more than the double of the focal length of the mirror.

d. placed at a distance equals the double of the focal length.

⑲ (a) placed at the focus

⑳. The source of genetic variation is the .... reproduction.

a. budding   b. sexual   c. vegetative   d. regeneration

⑳ (b) sexual

㉑. The optical piece which forms equal, laterally inverted image of the body is the ....

a. convex lens.   b. concave lens.   c. spherical mirror.   d. plane mirror.

㉑ (d) plane mirror

㉒ The amount of the change in the speed of a moving object in one second is called. ((a. velocity   b. displacement   c. acceleration))

㉒ (c) acceleration.

㉓ The ratio between the final speed and the initial speed for an object moving in a straight line with a negative acceleration is ....

a. more than one.   b. less than one.   c. equal to zero.   d. equal to one.

㉓ (b) less than one

㉔. The vegetative reproduction occurs in plants without need of ....

a. roots.   b. seeds.   c. stems.   d. leaves.

㉔ (b) seeds

㉕. A concave mirror of focal length 10 cm, to form an equal image to a body, the body should be placed at .... from the mirror.

a. 5 cm   b. 10 cm   c. 15 cm   d. 20 cm

㉕ (d) 20cm

My best wishes

(74) اذا كان ~ r=40cm مُباشر $f = \frac{1}{2} r = 20cm$

(75) وحدة بناء الكون (المجرة)

(76) التكاثر بالبراعم يحدث في جميع الكائنات الحية التالية ماعدا نجم البحر

(77) الصورة المتقدربة تتكون من المرآة المستوية والعدسة المقعرة والعدسة المحدبة ثم جميع ما سبق

(78) تكونت الشمس بعد 10000 مليون سنة من الانفجار العظيم

(79) وضع جسم أمام مرآة مقعرة فلم تتكون له صورة مماير لا على أبعاد الجسم وضع عند البؤرة (at the focus)

(80) مصدر التنوع الوراثي هو التكاثر الجنسي

(81) القطعة الضوئية التي تكون صورة مساوية للجسم ومعكوسة الوضع هي المرآة المستوية

Plane mirror

(82) معدل تغير سرعة جسم متحرك في الثانية الواحدة يسمى (العجلة acceleration)

(83) النسبة بين $\frac{V_2}{V_1}$ لجسم يتحرك في خط مستقيم بعجلة سالبة هي أقل من واحد

(84) التكاثر الخضري يحدث في النباتات بدون الحاجة الى بذور

(85) مرآة مقعرة بعدها البؤري 10cm لتكوين صورة مساوية للجسم جيب وضع الجسم على مسافة 20cm من المرآة لأن $r = 2f = 2 \times 10 = 20cm$ اي ان الجسم يقع عند (c)

[My best wishes]